

# *Construction*

IN THE SOUTH

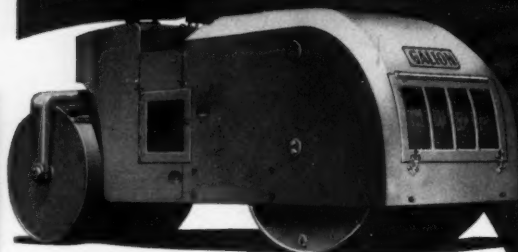
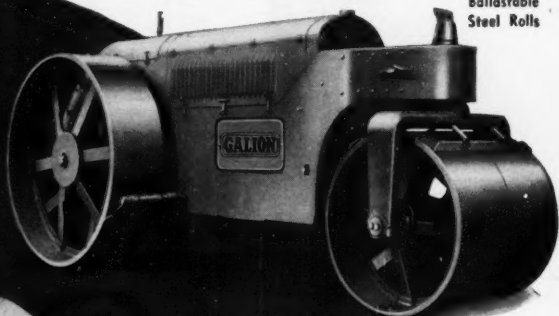


**OCTOBER 1951**

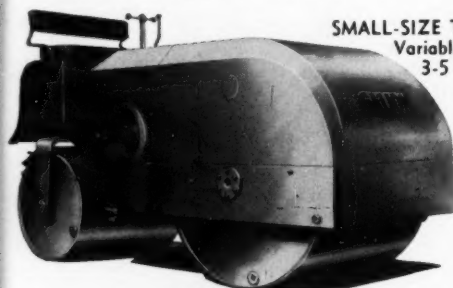
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MORE-**

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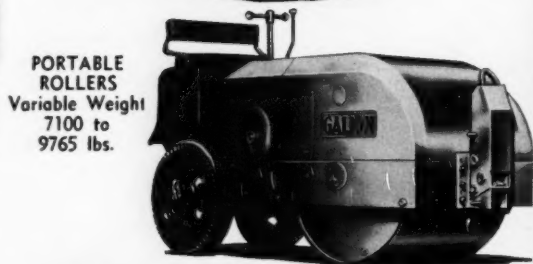
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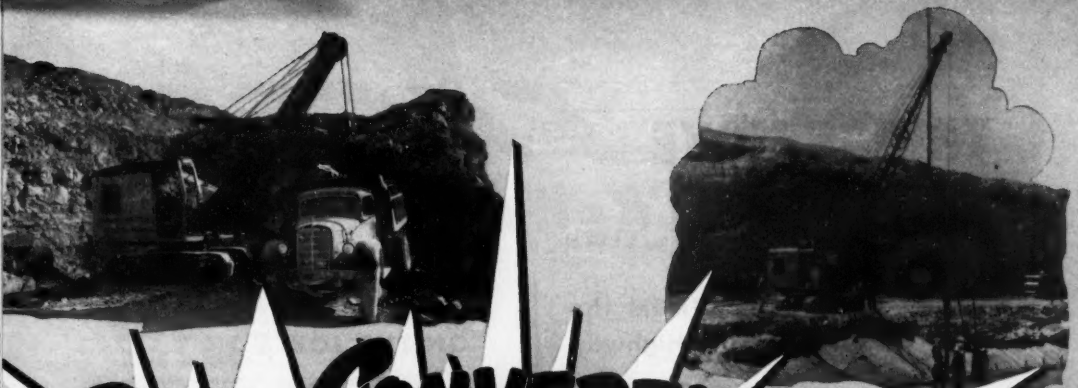
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# REAL CONVERTIBILITY

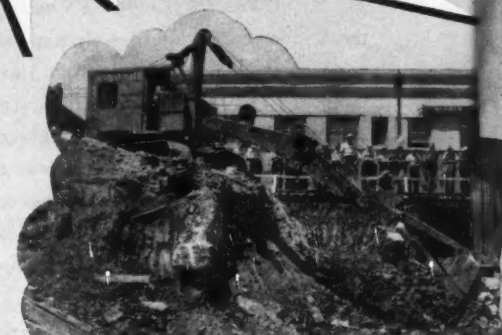
IS MORE THAN A CHANGE OF BOOMS!

CONVERSION means more than changing a boom! It means fitting a piece of equipment for a different class of work! Northwest pioneered the convertible shovel — crane — dragline — and pullshovel. Behind Northwest convertibility is an experience that others have yet to acquire. Other equipment is often spoken of as "A Good Crane", "A Good Dragline", or "A Good Shovel or Pullshovel!" When you change from one type of operation to another on a Northwest, you do so with the full knowledge that you are combining the new attachments with a group of operating advantages which have made Northwest universally recognized as a leader. This is true whether operating as a Shovel, Crane, Dragline or Pullshovel!

*Real Convertibility is more than a change of booms!*

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135 South LaSalle Street, Chicago 3, Illinois



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MORE WORK FINISHED  
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**PAYS FOR  
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FASTER!**



You Make **PROFITS  
FASTER**

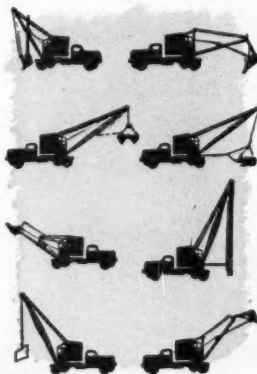
Job Tickets tell the story...more hours of work each day...more work per hour...lower operating costs...lower maintenance costs...it all adds up to bigger profits for you.



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BLUE BOOK OF SOUTHERN PROGRESS

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OCTOBER, 1951

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**Help you Build Better...  
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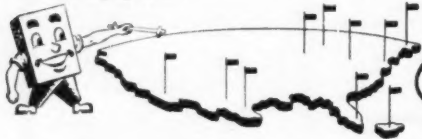
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Whether your job is large or small—you get complete engineering service. Universal's concrete form specialists...trained to think in terms of faster forming and economy...will analyze your job...recommend methods, materials and techniques...supply form layouts...details...bills of material—to simplify and speed your job.



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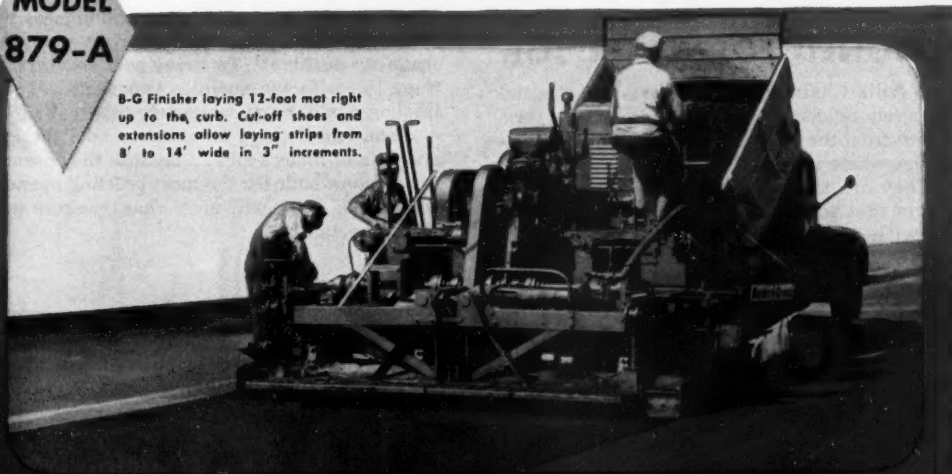
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## TAMPING-LEVELING FINISHER

MODEL  
879-A

B-G Finisher laying 12-foot mat right up to the curb. Cut-off shoes and extensions allow laying strips from 8' to 14' wide in 3" increments.



**SPREADS** material evenly  
**COMPACTS** to uniform density  
**LEVELS** automatically without forms

Unequaled method for properly laying a smooth, level surface for paving streets, highways, runways, parking lots, tennis courts and similar jobs.

The world's most widely used paving machine: gives superior performance in laying every type of surface—hot or cold—from clay stabilized gravel to high-type sheet asphalt.

Tamps, levels and strikes off simultaneously: automatically measures the correct amount of compacted material, produces a level surface that is maintained under rolling and traffic.

Compacts material as it is being laid; while it is hot and workable—assures a superior surface of uniform density, even when laid over an irregular subgrade.

Whether paving over new subgrade or resurfacing existing pavement, the B-G leveling principle assures a smooth, ripple-free surface without the need of forms . . . abrupt changes in subgrade cannot change the grade line of the mat.

High capacity with low maintenance: saves truck time, reduces the amount of rolling required and size of crew.

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## DESIGNED FOR YOUR JOB

These Allis-Chalmers tractors are new models, not merely refinements of existing ideas . . . they are new from the ground up . . . without compromise anywhere in design or material.

They are the answer to your demands for tractors that will give you outstanding performance with any equipment—mounted or drawn. New POWER, WEIGHT and BALANCE put each model in a class by itself! And there's a complete new line of Allied equipment to match these tractors for your job.

## BUILT TO "TAKE IT" . . .

These are the finest tractors ever built . . . with ample capacity and strength in every part! And that's no accident! To bring you tractors like these . . . with the qualities you want . . . Allis-Chalmers built them completely new.

You can depend on them to take the loads and jolts of today's jobs . . . because they are modern tractors built for the most grueling operating conditions. They will more than measure up to your expectations!



**HD-5**

40.26 drawbar hp., 11,250 lb.

**HD-9**

72 drawbar hp., 18,800 lb.

**YEARS AHEAD**



Each of these new Allis-Chalmers crawlers gives you a new yardstick for rating tractors. Each sets new standards in its class for performance, strength, servicing, operation. Get the full story from your Allis-Chalmers dealer NOW on this—The Newest, Finest Tractor Line on Earth.

# ALLIS

TRACTOR



# Tractor Line on Earth!

## EASY TO OPERATE . . .

Operators have long awaited the greater handling ease and comfort now brought to them by this new line of Allis-Chalmers tractors.

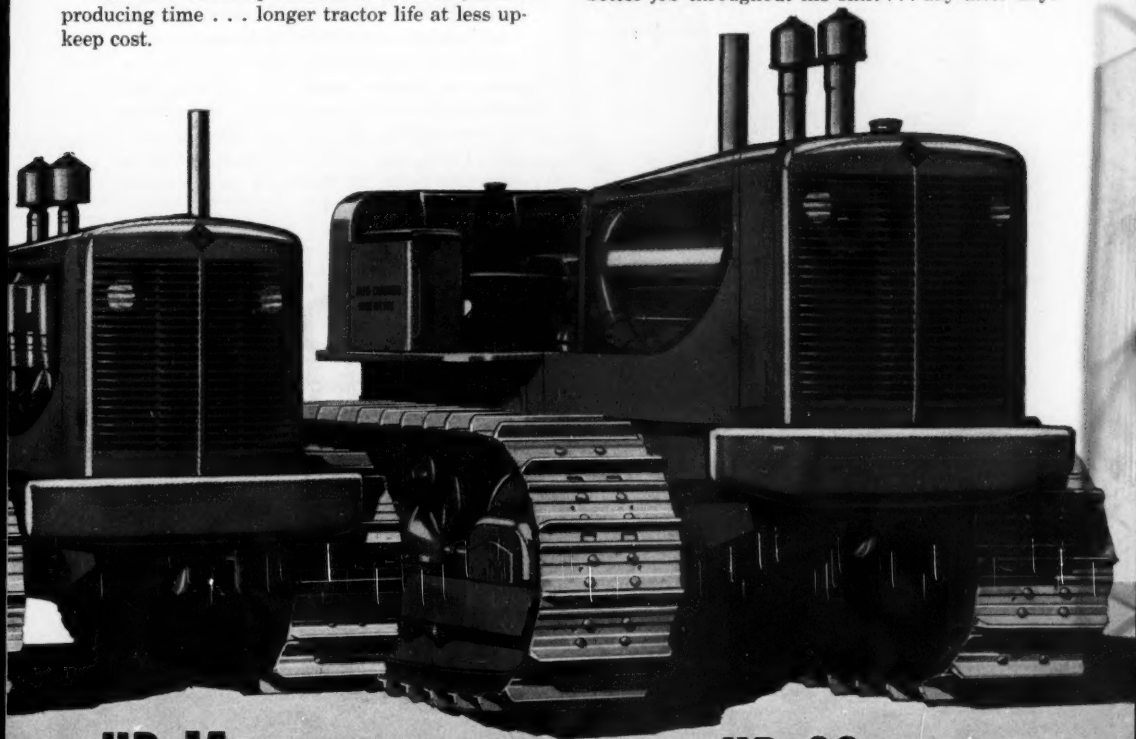
Conveniently located controls respond to the slightest effort . . . and are operated in the same familiar way—nothing tricky to "catch on to." There is new shifting ease, new seat and platform comfort, full visibility.

Because the operator's job is easier—takes less effort—he can maintain a steady pace, do a better job throughout his shift . . . day after day.

## EASY TO SERVICE . . .

Adjustments are easier . . . lubrication simplified and lube periods greatly extended. Mechanics say these tractors are the easiest to service and repair.

This all adds up to less down time, more producing time . . . longer tractor life at less upkeep cost.



### HD-15

109 drawbar hp., 27,850 lb.

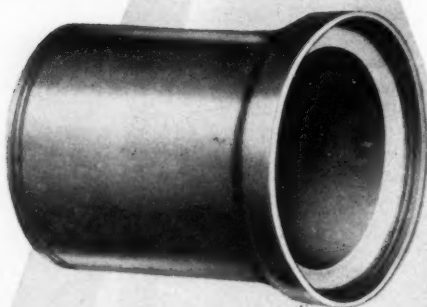
### HD-20

Hydraulic Torque Converter Drive, 175 net engine hp., 41,000 lb.

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**I**N A.S.T.M. acid-resistance tests, specimens are immersed in heated acid solutions for a period of 48 hours. Vitrified Clay Pipe emerges from this bath of fiery destruction *without so much as a mar or pockmark!*

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## **OCONEE**

**Clay Products Company**  
**Milledgeville, Georgia**



**Remember when you want CLAY PIPE —**  
**Specify it. It NEVER WEARS OUT.**



*Vitrified*  
**CLAY  
PIPE**

C-549-1

## Buildings Being Erected At Calcasieu Lock



Calcasieu lock is one of four structures included in the Corps of Engineers' comprehensive plan to protect the rice-growing area of the Mermentau River basin in southwestern Louisiana from inundation by floods, and from intrusion of salt water into the streams supplying irrigation water for the rice fields.

The lock is located on the Gulf Intracoastal Waterway just east of the intersection of the waterway and the Calcasieu River. Before construction of the lock, salt water from the Gulf of Mexico flowed up the Calcasieu River during low water periods, and thence through the Gulf Intracoastal Waterway into the rice-growing area in the Mermentau River Basin. Calcasieu lock, which was sufficiently complete to be placed in operation during December 1950, guards against the intrusion of salt water from the Calcasieu River and permits the passage of navigation on the Gulf Intracoastal Waterway.

Other structures incorporated in the overall plan are: Catfish Point control structure, which guards against salt water intrusion from the Gulf of Mexico through the Mermentau River; Schooner Bayou control structure, which guards against salt water intrusion from Vermilion Bay through Schooner Bayou; and Vermilion lock, which guards against salt water intrusion from Vermilion Bay through the Gulf Intracoastal Waterway.

All structures were completed and placed in operation this year to provide from 45 to 60 days' protection to rice crops before Schooner Bayou control structure was opened to raise the level of navigable streams in the area. Because of severe drought in the Mermentau

basin, where a fourth of the nation's rice production is grown, rice crops would have been endangered had the structures not been in operation to prevent the uncontrolled tidal inflow of salt water.

Calcasieu lock is an earth chamber structure with two sets of sector gates set in concrete abutments at each end of the chamber. The lock chamber is 1,180 feet long with a gate opening of 75 feet. The earth slopes of the lock chamber are protected with concrete paving. Sector gates are used to permit controlled opening of the gates against a head of water. The gates are controlled from four points—one on each side of each set of gates.

The lock structure and approach channels were completed and opened to navigation in December 1950. In July of this year, a \$77,745 contract was awarded to the Robira and Thurber Development Corp. of Lake Charles, La., for construction of reservation buildings and appurtenant works.

Principal features of the contract are construction of an office building and two 2-bedroom frame residences, remodeling the existing field office for use as a day room and for storage, installing utilities, constructing sidewalks, and miscellaneous appurtenant works.

The contract is currently about 25 per cent complete, with final completion scheduled for April 1952.

The project is under the jurisdiction of Col. Charles G. Holle, district engineer of the New Orleans District, Corps of Engineers, and under the supervision of James R. Buchanan, field assistant to the engineer in the Lake Charles La., area.

expansion of its chemical operations.

With the refinery now operating at top capacity, Mr. Voorhies said the expansion program is planned to meet the nation's defense needs and the increased requirements of petroleum products for civilian and industrial consumption. Construction of the new facilities will begin immediately and is expected to take about two years for completion.

Expanded facilities will include new

distillation equipment for crude oil and other petroleum fractions; expansion of fluid catalytic cracking facilities; additional equipment for processing petroleum gases to provide some of the raw materials for chemicals and materials for aviation gasoline; expanded blending and shipping facilities for gasoline, kerosene and heating oil.

Facilities for producing additional butadiene, raw material for synthetic rubber, and for increasing the refinery's output of synthetic alcohols from petroleum are also scheduled as well as equipment for the production of benzene, a chemical useful in the manufacture of synthetic rubber and plastics.

The new construction represents the refinery's second major postwar expansion. When the present project is completed the plant's capacity will be twice its wartime throughput of 135,000 barrels a day. Refinery workers number about 8,000 and the payroll payments have reached a peak of more than \$36,000,000 per year.

## Arkansas Road Proposals Above \$2,000,000

Bids received for Arkansas road projects include those in following counties:

Pike—Job 3424, 6.713 miles of grading, minor drainage structures, gravel base and bituminous surfacing on Daisy-Kirby Road, State Highway 70, Section 4, Steinberg Construction Co., Tulsa, Okla., \$145,575;

Nevada—Job 5364, 4.188 miles of grading, minor drainage structures, gravel base course and double bituminous surface treatment on Prescott-Blevins Road, State Highway 24, Section 4, Mode-McCracken Co., Conway, \$52,200;

Cleburne—Job 5364, 13.736 miles crushed stone surface course on Huber Springs-Edgemont Road, Highway 16, Section 11, Fel Vaughn, North Little Rock, \$64,423;

Washington—Job 9302, 9.4 miles bituminous resurfacing on selected stretches of Crawford County line-North Road, Highway 71, Ben M. Hogan, Little Rock, \$101,989;

Saline—Job 6326, 10.773 miles grading, minor drainage structures and one reinforced concrete and structural steel bridge on the Benton-Pulaski County line Road, F. A. P. U-522 (3) and FI-522 (2), State Highway 67, Section 9, and State Highway 70, Section 11, D. B. Hill Co., Little Rock, \$305,377;

Lee—Job 11418, 8.232 miles gravel base course and double bituminous surface treatment on Marianna-Bear Creek, Moro-Junction Highway 79, and Smiths Corner-Aubrey Roads, State highways 44, 78 and 121, sections 5, 2 and 3, Doyle-O'Neal Co., Memphis, \$95,996;

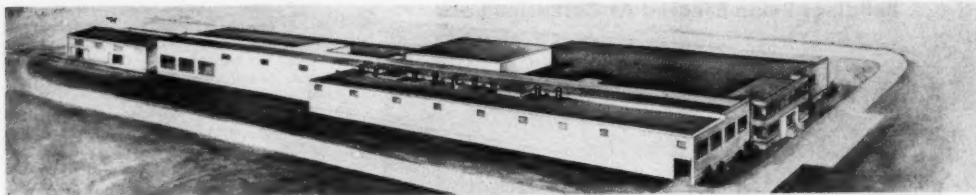
Jefferson—Job 2418, 12.525 miles grading, minor drainage structures, gravel base course and double bituminous surfacing treatment on Cornerstone-Reydel Road, F. A. P. S-350(4), State Highway 88, Section 9, McGeorge Construction Co., Pine Bluff, \$252,714;

Sebastian—Job 4372, .649 of a mile of grading, minor drainage structures,

(Continued on page 12)

## Esso Plans Expansion At Baton Rouge

Esso Standard Oil Co. plans to spend more than 35 million dollars for new construction at Baton Rouge, announces General Manager H. J. Voorhies. The extensive construction project calls for increasing the refinery's processing capacity from 240,000 to 270,000 barrels of crude oil daily, in addition to a major



Above—\$4,000,000 paper mill being erected at Pryor, Okla., by National Gypsum Co.

## National Gypsum Constructing \$4,000,000 Pryor Plant

National Gypsum Co. is constructing a \$4,000,000 paper mill at Pryor, Okla., as part of what its officials have described as "engineering the future for midwestern markets."

Located on a 49-acre site, the plant is 242 feet 4 inches wide by 580 feet long, with a 60 by 80-foot warehouse at one end, making a total length of 660 feet.

The building is one story in height, with a two-story office section where employee facilities will also be installed. Part of the pulp preparation will also be two stories high.

Rail service is furnished by a spur of the Missouri-Kansas-Texas railroad to both the loading and unloading docks. These docks also have provision for trucking operations.

The baled paper storage area is to be enclosed by a "cyclone" fence, this to be completely within the building. A machine shop is to be made an integral part of the mill.

The mill incorporates the latest thought on paper mill design, with every known and proven feature for economical and efficient production. The finished roll storage area will be immediately adjacent to the loading dock.

A 450-foot Black-Clawson machine will produce the end product. A "save-all" unit will clean the waste water. Recovered pulp will be pumped back into the processing operation.

Construction materials are steel and tile. The roof will be concrete. Fire protection is to be provided by a sprinkler system with a complete water loop. A Ross air conditioning system is to be installed. The office section will be completely air conditioned.

Designs for the new Pryor mill were made by National Gypsum engineers. The general contractors are the Manhattan Construction Co., of Muskogee.

Paper liner made by the new plant will supply the company's three gypsum wall-board mills at Rotan, Texas; Fort Dodge, Iowa and Medicine Lodge, Kansas.

The new board and plaster mill at Medicine Lodge was recently placed in operation. It cost \$3,500,000 and produces enough gypsum board in one month to build 3,000 average homes, as well as lath, fibred plaster and gauging and molding plasters.

Earlier this year National Gypsum increased capacity of its board and plaster mill at Fort Dodge, Iowa, where modernization cost \$600,000.

Other projects in the National Gypsum

chain include additions and improvements at Bellefonte, Pa., increasing capacity by 50 per cent at a cost of \$1,500,000; erection of several warehouses costing \$800,000 and expenditure of \$552,230 for an addition to the executive offices at Buffalo, N. Y.

Gross sales reported by National Gypsum for the first six months of 1950 totaled \$45,503,007, from which a gross profit of \$13,994,435 was realized. Net profit, however, amounted to \$3,946,518.

## \$3,216,256 Awards Made For Oklahoma Turnpike

The Oklahoma Turnpike Authority is speeding plans to have all of the 88-mile 4-lane road under paving contract before the first of 1952, approximately one year from the time the first construction began on the \$31,000,000 Oklahoma City-Tulsa road.

General Manager H. E. Bailey says bids will be taken on two types of surfacing, Portland cement and asphaltic concrete under specifications sufficient to carry more than the maximum 28,800 pound axle load authority engineers claim the turnpike must carry.

Cement bids will be on 8-inch surface with a 4-inch sand cushion and a 9-inch surface with a 3-inch sand cushion. There will be three alternates on asphaltic concrete paving, 5-inch surface on a 7-inch crushed rock base, 6-inch on a 6-inch crushed rock base and 8-inches on a 4-inch crushed rock base.

The tight steel situation, according to engineers, was echoed in bids the Oklahoma Turnpike Authority received on eighteen bridges at its September meeting.

On six bridges the combined low bids were \$2,722.12 under cost estimates, but in no instance was any bid more than \$1,767 under. On 12 bridges the combined low bids were \$78,793.64 above estimates, ranging from \$2,400 to \$17,440 per bridge.

Contracts were let on all structures for \$76,071.52 above estimates. All bridges are I-beam structures.

Contracts were also let on 10.647 miles of 4-lane road bed construction in Creek county for \$1,472,737.50 or \$16,894.64 under estimated costs.

Awards totaled \$3,216,256 as follows: Grading and drainage awards:

3.088 miles, Elliott Brothers, Perry, and Palleson Construction Co., Oklahoma City, \$406,272 or 8.5 percent below estimate.

2.593 miles, Amis Construction Co., Oklahoma City, \$314,280 or 4.6 percent below estimate.

2.970 miles, Clark & Farrell, Pine Bluff,

Ark., \$401,271 or 8.8 percent above estimate.

1.996 miles, Clark & Farrell, \$356,551 or 1.6 percent above estimate.

Bridge awards: Oklahoma and Lincoln Counties—Bridge 1, E. E. Barber, Fort Smith, Ark., \$89,568 or 4.9 percent above estimate.

Bridge 2, Barber, \$195,360 or 1 percent below estimate.

Bridge 3, Suddreth Construction Co., Oklahoma City, \$85,427 or 4 percent below estimate.

Bridge 4, low bidder, Suddreth company, \$98,338 or 1 percent below estimate.

Bridge 5, low bidder, Oklahoma Paving Co., Oklahoma City, \$262,698 or 7 percent below estimate.

Bridge 6, Oklahoma Paving Company, \$59,644 or 2 percent below estimate.

Bridge 7, Oklahoma Paving Company, \$34,228 or 3 percent below estimate.

Lincoln County—Bridge 1, A. K. McBride, Fort Smith, Ark., \$29,840 or 12.9 percent above estimate.

Bridge 2, Amis Co., \$72,759 or 9.3 percent above estimate.

Bridge 3, Gragg Construction Co., Henryetta, \$211,078 or 9.3 percent above estimate.

Bridge 4, Gragg Construction Co., \$67,731 or 12.7 percent above estimate.

Bridge 5, Gragg Co., \$77,699 or 13.4 percent above estimate.

Bridge 6, Amis Co., \$27,598 or 9.6 percent above estimate.

Bridge 7, Amis Co., \$28,194 or 9.6 percent above estimate.

Bridge 8, Amis Co., \$48,586 or 9 percent above estimate.

Bridge 9, Mosher & Kiker, El Reno, \$254,147 or 4.7 percent above estimate.

Creek County—Bridge 1, Henryetta Construction Co., Henryetta, \$72,738 or 8.5 percent above estimate.

Bridge 2, Henryetta Co., \$27,877 or 10.4 percent above estimate.

## Arkansas Road Proposals Above \$2,000,000

(Continued from page 11)

crushed stone base course, bituminous surface course and remodeling reinforced concrete deck girder bridge on Nigger Hill-Relocation Road, F. A. P. F-302, State Highway 22, Section 1, \$90,372; rejected:

Independence—Job 5365, 5.4 miles of gravel base course and double bituminous surface treatment on Rosie-Elmo Road, State Highway 14, Sections 9 and 10, Bucton Construction Co., Hazen, \$34,810;

Quachita—Job 7411, 1.474 miles grading, minor drainage structures, gravel base course and bituminous surfacing on Camden-West Road, F. A. P. S-346(2),

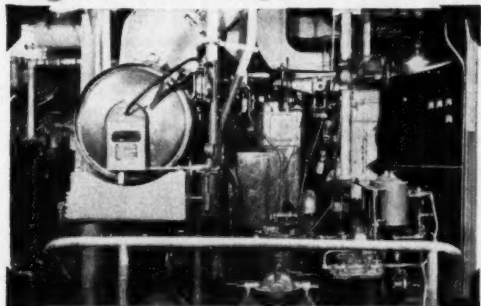
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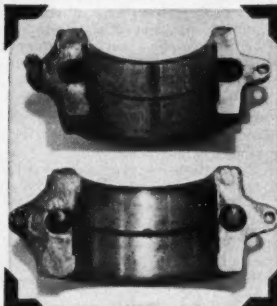
# STANDARD ENGINEER'S REPORT

DATA	
LUBRICANT	<i>RPM DeLo Oils</i>
UNIT	<i>Atlas diesel engines</i>
SERVICE	<i>Tuna fishing - long cruises</i>
CONDITIONS	<i>Constant load operation - high temp.</i>
FIRM	<i>M. V. Lucy Elena, San Diego, Calif</i>

## Engine-cleaning oil saves overhaul, ends bearing failures!



WORKING UNDER CONSTANT LOAD for as long as 90 days at a time, the Lucy Elena's diesel engines continually "gunked up", rings stuck and one of the auxiliaries wiped out a bearing. Switching to RPM DELO Heavy Duty Oil stopped all the trouble. It cleaned

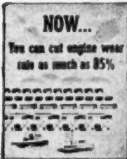


deposits from the engines and saved the expense of tearing them down. For over 1½ years now it has kept all moving engine parts clean and in good condition. The connecting-rod bearings and piston shown above came from one auxiliary after 8000 hours operation.



THE M. V. LUCY ELENA fishes off California and South America. Standard Diesel Fuel is used in her engines. Its controlled distillation range, correct flow and proper ignition provide full, uniform power. Standard Diesel Fuel and RPM DELO Oil get the most out of diesels.

CAPTAIN JOHN BALESTRERI of the Lucy Elena, says, "In the tuna-fishing business, engine trouble can be mighty costly both in lost time and cargo. Since using RPM DELO Heavy Duty we have had exceptionally clean engine operation and no bearing trouble as we experienced with the previous oil."



There is an RPM DELO Oil to meet every heavy-duty engine operation condition.

FREE BOOKLET on the RPM DELO Oils gives you complete information. Write or ask for it today.



TRADEMARK "RPM DELO" REG. U.S. PAT. OFF.

### How RPM DELO Oils keep engines clean and prevent wear



- A. Contain special additives that provide metal-adhesion qualities...keep oil on parts whether they are hot or cold, running or idle.
- B. Anti-oxidant resists deterioration of oil and formation of lacquer...prevents ring-sticking. Detergent keeps parts clean, helps prevent scuffing.
- C. Special compounds stop corrosion of any bearing metal, and oil foaming in both wet and dry sump engines.

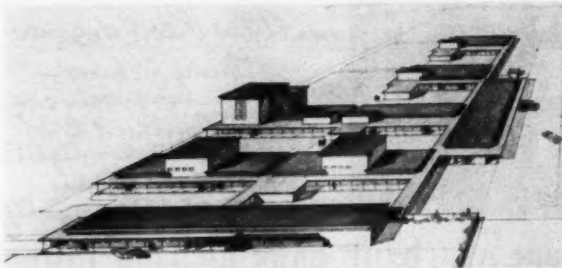
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## Dow Research Center Proposed in Texas



Above—Architect's conception of the proposed \$2,600,000 Dow research center. The eight buildings will be of concrete and masonry with stucco exterior and glazed structural tile interior. Oxyment, a Dow production, will be used in the stucco and flooring. MacKie and Kamrath are the architects; Howard and Johnson, the consulting engineers for the project.

In keeping with its over-all expansion program, Dow Chemical Co. has announced plans to build new research facilities at its Midland, Mich., and Freeport, Texas, plants costing \$4,500,000.

The Midland project includes new organic, spectroscopy and special service laboratories as well as a new technical library building, while the Freeport project will take the form of an eight-building research center of 57,000 square feet.

Dr. A. P. Beutel, Dow, vice president and general manager of its Texas Division, said the Freeport center will cost \$2,600,000 and will provide a total floor space of 57,000 square feet. It will afford the most modern and up-to-date laboratory facilities for the company's already

extensive research activities. In addition to the laboratories, the center will include a very complete technical library.

MacKie and Kamrath of Houston are the architects, while Howard and Johnson, also of Houston, consulting engineers, are in charge of the mechanical engineering. Work on the project will commence as soon as the necessary government authorizations are obtained.

Dr. Beutel said, "This is but another step reflecting the confidence in Dow's future in Texas and the great Southwest. It also is an indication of the determination of the Company to maintain its position of leadership in the chemical industry through continuous research and development."

## Big Texas Opening Results In \$9,011,358 Bids

The Texas State Highway Department last month received bids totaling \$9,011,358 during a two-day opening. Listed by counties, the projects included the following:

Navarro—C-92-6-30 and C-93-1-12, 1,392 miles concrete pavement widening, U. S. 75 from underpass in Corsicana to near the south city limits, canceled;

Wheeler—C-30-88 and C-275-12-15, 247 of a mile, Silver Creek bridge and approaches and installation of pipe culvert, north of Wheeler and in Shamrock, Cooper & Woodruff, Amarillo, \$40,102;

Colorado—R-897-2-1, 6,609 miles grading and structures, FM 950, from State Highway 71 at Garwood to FM Highway 102 near Matthews, Cage Brothers, San Antonio, \$27,328;

Travis and Williamson—R-1376-2-1 and R-1376-1-1, 8,503 miles grading and structures, FM 1325, from State Highway 29 at Payton's Gin to U. S. 81 south of Round Rock, Cage Brothers & Dean Skinner, San Antonio and Austin, \$59,487;

Leon—RV-1457-1-1, 5,832 miles grading, FM 1511, structures, base surfacing, F. C. Lerrling, Kurten, \$57,417; from U. S. 75 southeast of Flo School;

Lamar—V-680-7-1, 3,688 miles grading, structures, base and surface, FM 1185, from U. S. Highway 82 at Blossom north

to Faught, John F. Buckner & Sons, Cleburne, \$50,871;

Hunt—V-1494-1-1, 9.29 miles grading, structures, base and surfacing, FM 1565, grading structures, base and surfacing, U. S. 67 southwest of Caddo Mills to Union Valley, R. W. McKinney, Nacogdoches, \$154,271;

Jackson—S-1440(1) and R-1307-1-2, 11.4 38 miles grading structures, base and surfacing, FM 1157, from State Highway 172 at Danado, southeast to State Highway 111, Dudley R. Cloud & Son, San Antonio, \$191,002;

Guadalupe—FI-73(4), 2,682 miles grading, structures and foundation course U. S. 81 from north of Bexar County line, Killian-House Co., San Antonio, \$64,302;

Nacogdoches—S-1164 (1), 4,995 miles State Highway 7, west to Nacogdoches to east of Angelina River, grading and structures, T. R. Vardeman & Son, Nacogdoches, \$136,026;

Franklin—S-900(1), 10,453 miles strengthening existing base and two course surface treatment, State Highway 37, from Mt. Vernon to Hagansport, John F. Buckner & Sons, Cleburne, \$137,572;

Kenedy—C-327-2 & 3-8 & 6, 18,357 miles widening structures, reconstructing and widening flexible base and asphalt concrete pavement, U. S. 77 from Turcotte to

south end of Los Olmos Creek bridge, Heldenfels Brothers, Rockport, \$602,986;

Harris—MC-27-10-6, .071 of a mile, repairs to 69th Street bridge at Buffalo Bayou in Houston, U. S. 90, Southern Contracting Co., Austin, \$23,873;

Zavala—V-1279-1-3, 2,157 miles grading, structures, base and surfacing, FM 1025, from northeast of Crystal City to intersection with FM Highway 117, Thomas & Ratliff, Rogers, \$104,882;

Hunt—V-1495-1-1, 6,524 miles grading, structures, base and surfacing, FM 1566, from FM Highway 272 near G. C. & S. F. Railway Crossing via White Rock to State Highway 34, H. L. Butler & Sons, Dallas, \$93,642;

Hunt—V-764-3-1, 8,306 miles grading, structures, base and surface, FM903 from Kingston via Crescent to Wagner, R. W. McKinney, Nacogdoches, \$141,654;

Wichita—C-156-3&2-10&10, 9.79 miles grade revisions, flexible base and hot mix asphalt concrete pavement, U. S. 277 and 281 from Sheppard Air Base to Red River, Ernest Loyd, Fort Worth, \$363,621;

Gonzales—C-143-6-7, 6,901 miles flexible base and asphaltic pavement, U. S. 87 from Wilson County line to Smiley, Roy Dugger, Corpus Christi, \$132,362;

Hutchinson—C-356-2-2 and C-557-2-6, 9.71 miles grading, structures, flexible base and asphalt concrete pavement, State Highways 117, 152, Loop 140 from Junction with State Highways 117 and 152 south of Stinnett to Fifth Street in Stinnett and from Borger to Stinnett, Bell, Braden, Barker & Gilvin, Amarillo, \$40,102;

Hunt and Delta—V-1466-1-1 and V-1466-2-1, 5,111 miles grading, structures, base and surfacing FM 1531, from Highways 11 and 24 in Commerce to Delta County line and from Hunt County line to intersection near Horton, Ernest Loyd, Fort Worth, \$65,176;

Liberty—R-1421-1-1, 5,151 miles grading structures, base and surfacing, FM1413 from Sheeks (junction with U. S. 90) to Gun Island (junction with Highway 146) J. W. Perry San Antonio, \$104,192;

Harris—F-839(5), Contract 2 for completion of Baytown Tunnel, Farnsworth & Chambers, Houston, \$3,748,231;

Travis—UI-2000(7), 2,117 miles flexible base and hot mix asphalt concrete pavement, U. S. 81 from east 46th Street to east 17th Street in Austin, McKown & Sons, Austin, \$237,704;

Jefferson—C-508-4 & 5-7 & 4 and V-1075-1-2, 1,406 miles grading, drainage structures on Highway 73, Spur 214 FM, 823, from junction with State Highway 87 in Port Arthur to Taylors Bayou, Trotti & Thomson, Inc., Beaumont, \$253,836;

Grayson—No. 91-1-17 S-76(3), 3,674 mile strengthening existing base and two course surface treatment, Highway 289, from Collin County line to Gunter, Howard Brothers, Madisonville, \$71,488;

Harris—C-110-6 & 5-8 & 10, 10,959 miles grading, structures, pavement widening and hot mix asphalt concrete pavement, U. S. 75 from Loop 149 to south of Montgomery County line, Gaylord Construction Co., Houston, \$377,834;

Liberty—C-813-1-4, 6,492 miles grading, structures, flexible base and two course surface treatment, Highway 105-T, from

(Continued on page 17)

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## Oklahoma Makes Awards For Eleven Road Projects

The last unsurfaced stretch on U. S. Highway 60 in Oklahoma was placed under contract at the September meeting of the Oklahoma State Highway Commission.

The job provides for 6.941 miles of Portland cement paving in Ottawa county at a cost of \$475,983. The highway is 341 miles long in the state.

The commission disapproved the low bid on 13.395 miles of roadbed construction on State Highway 7, Johnston county, because the figure exceeded estimated costs by 11.45 percent. Hunter Construction Co., of Ada, was low at \$117,514. Estimated cost was \$107,633.45.

Bids accepted by the commission follow:

Murray County—U. S. 77, RC-101(1) .286 of a mile of repairs to approaches and two bridges at Washita river, south of Davis, estimated cost, \$37,123; Ray W. Lynch, Oklahoma City, \$31,870;

Major County—S. H. 58, S-349(5) (SH) Gr. 7.655 miles of 30-foot roadbed from Fairview west and south to Blaine county line, estimated cost, \$73,668; G. E. Keck, Fairview, \$65,096;

Major County—S. H. 58, S-349(5) (SH) Br. .055 of a mile, triple cell reinforced concrete culvert 32 feet wide and five-span 250-foot concrete girder span bridge, 28 feet wide, latter on Sand creek, on road from Fairview, estimated cost, \$105,322; Park-Ward Co., Oklahoma City, \$87,889;

Ottawa County—U. S. 60, F-486(9) 6.941 miles 36-foot roadbed, 6-inch compacted chat stabilized base 36 feet wide, 8-inch Portland cement paving 24 feet wide, 6-foot single bituminous shoulders, from Fairview to Wyandotte, estimated cost, \$474,333; Jack Briscoe, Stillwater, \$475,983;

Adair County—U. S. 59, SAP-425(7) Pt. 1Gr., 7.002 miles 36-foot roadbed from approximately south of Adair-Delaware county line, extending south, estimated cost, \$238,756; W. E. Logan & Sons, Muskogee, \$235,376;

Adair-Delaware Counties—U. S. 59, SAP-425(7) Pt. 2Gr., 1.872 miles 36-foot roadbed from S. H. 33, south, estimated cost, \$26,527; Logan and Sons, \$25,907;

Adair County—U. S. 59, SAP-425(7), remove and reset 75,000 gallon steel water tank and tower of Kansas City Southern railway at Watts, estimated cost, \$12,500; Gragg Construction Co., Henryetta, on alternate bid, \$6,800;

Hughes-McIntosh County—S. H. 9, SAP-885(4) Pt. 1Gr., 5.316 miles 36-foot roadbed from west of Hughes-McIntosh county line, east, estimated cost, \$59,334; Smith Brothers, Noble, \$58,002;

McIntosh County—S. H. 9, SAP-885(4) Pt. 2Gr., 5.611 miles 36-foot roadbed, from east of Hughes-McIntosh county line, east, estimated cost, \$53,020; Smith Brothers, Noble, \$44,910;

Cleveland County—U. S. 77, SAP-1067 (1) Surf., business route, 3.448 miles 12-inch soil sub-grade 40 feet wide, 7-inch asphaltic concrete paving 24 feet wide, 4-inch gravel shoulders 6 feet wide, from Norman, north, estimated cost, \$190,820; Amis Construction Co., Oklahoma City, \$194,338;

Cleveland County—U. S. 77, SAP-1079 (1) Surf., alternate route, .475 of a mile of 6-inch soil subgrade 30 feet wide, 12-inch soil subgrade 40 feet wide, 7-inch asphaltic concrete paving 24 feet wide, 4-inch gravel shoulders 6 feet wide, from junction of S. H. 9 and S. H. 74 west of Norman, extending west, estimated cost, \$24,930; Amis Construction Co., Oklahoma City, \$25,246.

gravel or crushed stone surface, Route SNN, S-914(1), F. D. Choate, Contractors, Inc., Springfield, Mo., \$27,151;

Webster—4.228 miles graded earth and gravel or crushed stone surface, Route SK, S-206(3), F. D. Choate, Contractors, Inc., Springfield, Mo., \$15,503;

Carter—2.687 miles graded earth and gravel or crushed stone surface, Route SP, S-865(1), Hines & Ellerman Construction Co., Eminence, Mo., \$12,616;

Stoddard—4.934 miles graded earth, bridges and gravel or crushed stone surface, Route SF, S-978(1), J. W. Githens Co., Poplar Bluff, Mo., \$62,347;

Carter—1.885 miles graded earth and gravel or crushed stone surface, Route SU, S-840(1), Hines & Ellerman Construction Co., Eminence, Mo., \$12,306.

## Three Louisiana Openings Amount to \$2,442,298

Proposals totaling \$2,442,298 were received for the first three openings held last month by the Louisiana Department of Highways. Listed by parishes, they included the following:

St. Landry—S. P. 12-13-04, F. A. P. F-69(9), 6.340 miles grading, drainage structures and portland cement concrete pavement, Opelousas-Port Barre Highway, State Route No. 7, W. R. Aldrich & Co., Baton Rouge, \$353,357;

Terrebonne—S. P. 245-03-23 and 245-02-03, F. A. secondary S-119(2), 5.874 miles of grading and 178-foot 3/4-inch bridge consisting of 136-foot 1 1/2-inch steel plate girder swing span and two combination I-beam approach spans across Bayou Provost, small drainage structures and portland cement concrete pavement on Houma-Theriot Highway, State Route No. 247, W. R. Aldrich & Co., Baton Rouge, \$545,859;

Calcasieu—S. P. 31-06-11 and 31-07-02, 12.88/2 miles grading, small drainage structures, reinforced concrete slab span bridges, shell base course, alternates of gravel base course, soil cement base course or crushed stone base course and bituminous surface treatment (asphalt cement), on Houston River-DeQuincy Highway, State Route No. 104, Flenniken Construction Co., Lake Charles, \$612,681;

Franklin—S. P. 51-02-08 and 51-03-07, .031 of a mile grading and three 6 by 6 by 52-foot and two 7 by 7 by 40-foot reinforced concrete box culverts, gravel base course and bituminous surface treatment (asphalt cement), on Winnboro-Delhi Highway, State Route No. 16, Campbell Construction Co., Inc., Shreveport, \$18,535;

Rapides—S. P. 367-01-05, 4.699 miles shaping roadway, drainage structures, gravel base course and bituminous surface treatment (asphalt cement), on Deville-Holloway Highway, State Route No. 1973, Henry & Hall, Dubach, \$52,664;

Calcasieu—S. P. 810-12-07, 8.46 miles of clam shell and reef shell placed and spread, Westlake-Moss Bluff Highway, State Route 378 and 2207, W. T. Burton, Sulphur, La., \$154,222;

LaFourche—S. P. 829-20-02, .057 of a mile grading, timber bridges and shell surface course, welded steel pontoon bridge 84 by 24 by 7 feet and power unit,

## \$542,885 Bid to Build Missouri Highways

Sixty-five miles of Missouri highway work last month were bid at \$542,885. Numbering twenty, the projects include those in the following counties:

Scott—4.165 miles graded earth and widening, Route 61, Sec. 121, O'Dell & Riney Construction Co., Kirkwood, Mo., \$47,034;

Scott—3.848 miles graded earth and widening, Route 61, Sec. 122, O'Dell & Riney Construction Co., Kirkwood, Mo., \$36,212;

Adair—4.110 miles graded earth and bridge, Route SO, S-1129(1) a-A, P.&S. Construction Co., Macon, Mo., \$31,366;

Adair—2.670 miles graded earth, Route SO, S-1129(1) a-B, P.&S. Construction Co., Macon, Mo., \$20,472;

Adair—2.845 miles graded earth, Route SO, S-1129(1) a-C, P.&S. Construction Co., Macon, Mo., \$7,963;

Pike—1.490 miles graded earth and gravel or crushed stone surface, Route STT, S-792(4)-A, R. B. Jeffrey, Moberly, Mo., \$23,852;

Pike—1.149 miles graded earth and gravel or crushed stone surface, Route

ST, S-792(4)-B, R. B. Jeffrey, Moberly, Mo., \$13,478;

Benton—3.918 miles graded earth and gravel or crushed stone surface, Route SH, S-1088(1)-A, Davis Construction Co., Inc., Boonville, Mo., \$23,525;

Benton—3.845 miles graded earth and gravel or crushed stone surface, Route SH, S-1088(1)-B, Davis Construction Co., Inc., Boonville, Mo., \$18,260;

Ray—4.819 miles graded earth and gravel or crushed stone surface, Route SZ, S-1008(1)-B, Midwest PreCote Co., Kansas City, Mo., \$22,230;

Daviess—3.728 miles graded earth and gravel or crushed stone surface, Route SAA, S-929(1), Clark & Farmer Contracting Co., Inc., Camdenton, Mo., \$41,679;

Chariton—3.530 miles graded earth, Route SU, S-867(1)a, R. B. Jeffrey, Moberly, Mo., \$16,658;

Monroe—4.605 miles graded earth and gravel or crushed stone surface, Route SA, S-980(1), Lewis W. Arnold, Mexico, Mo., \$28,416;

Ralls—2.714 miles graded earth, bridges and gravel or crushed stone surface, Route SP, S-579(5), E. L. Harlin, Contractor, West Plains, Mo., \$72,287;

Greene—2.299 miles graded earth and



over Bayou LeFourche and Larose, W. R. Fairchild Construction Co., Hattiesburg, Miss., \$90,337;

Rapides—S. P. 840-10-05, 5 miles shaping roadway, culvert pipe, gravel base course and bituminous surface treatment (asphalt cement), Hot Wells-Boyce Highway, State Route No. 278-D, Henry & Hall, Dubach, \$54,816;

Terrebonne—S. P. 855-06-03 and 855-12-02, .607 of a mile of grading, small drainage structures, three 25-foot I-beam span bridge and portland cement concrete pavement, West Park Avenue and Bayou Terrebonne bridge (Houma) Highway, State Routes No. 965 and C-2190, Forcum-James Co., Baton Rouge, \$87,458;

Vernon—S. P. 703-08-26, Part 2, 13 miles of sand clay gravel surface course (grade B modified) and two creosoted timber trestle span bridges, Leesville Contracting Co., Leesville, \$27,509;

Assumption—S. P. 703-08-52, washed gravel f.o.b. railroad cars, Holloway Gravel Co., Inc., Amite, \$10,487;

Winn—S. P. 92-03-04, base course gravel, spot-dumped on Calvin-Winnfield Highway, Route 9, Paul A. Lambert, \$51,260;

Avoyelles—S. P. 805-13-02, base course gravel spot-dumped on Fifth Ward School-South Highway, State Route 1160, Richard Coco, Mansura, \$10,693;

LaFourche—S. P. 64-05-04, .825 of a mile of grading, small drainage structures one reinforced concrete deck girder span bridge shell base course, with gravel base course alternate and bituminous surface treatment (asphalt cement), LaRose relocation highway, State Route 78, Forcum-James Co., Baton Rouge, \$81,805;

Bossier—S. P. 108-01-08, 3.6 miles base course gravel, Curtis-East Highway, Route No. 1552, T. R. Tomlinson, \$48,600;

Richland—S. P. 171-03-06, base course gravel spot-dumped Route 15-Lucknow highway, Route 208, Twin City Gravel Co., Inc., Monroe, \$25,550;

Beauregard—S. P. 703-08-68, 7 miles surface course sand clay gravel, Merryville Oil field road, C. A. Arnold, De-Ridder, \$19,947;

East Carroll—S. P. 818-09-05 and 164-04-09, base course gravel spot-dumped on Waverly-Monticello and Monticello-South highways, Howard C. White, Lake Providence, \$63,306.

## Big Texas Opening Results in \$9,011,358 Bids

(Continued from page 14)

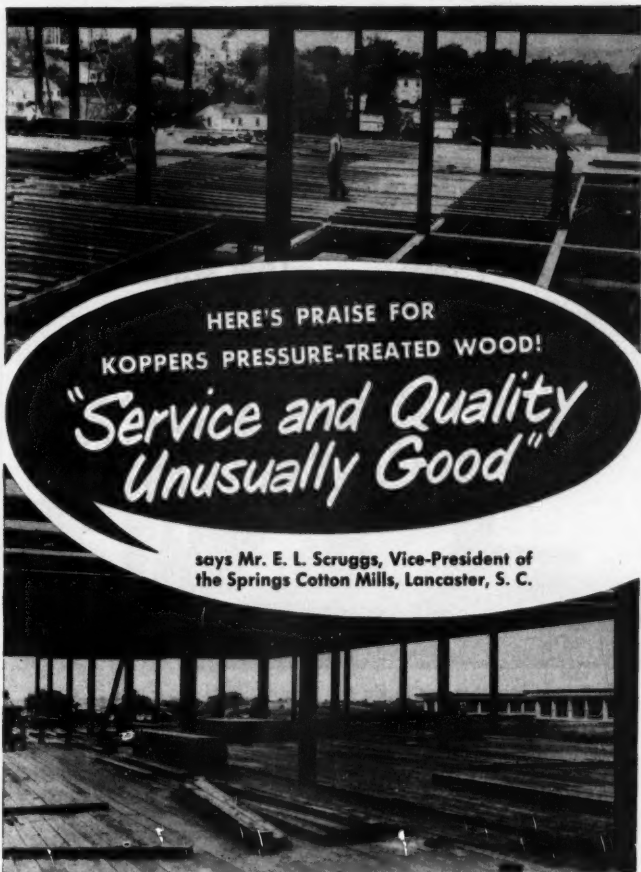
Rayburn to Romayor, Olene Hanson, Houston, \$134,432;

Bexar—UI-1083 (14), 1,287 miles of grading, structures and pavement, U. S. 81, Newell Avenue to Cameron Street in San Antonio, Killian-House, San Antonio, \$383,079;

Hall—S-53 (8), .233 of a mile, Prairie Dog Town Fork of Red River Bridge, Highway 70, located at Prairie Dog Town Fork of Red River south of Brice, J. B. Clardy Construction Co., Fort Worth, \$183,012;

San Saba—S-137 (2), 1.29 miles of relief bridges and approaches, Highway 16, north of San Saba, C. H. Harrison, Waco, \$185,843;

Limestone—C-93-4 & 5-17 & 14 and C-  
(Continued on page 18)



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*"Service and Quality  
Unusually Good"*

says Mr. E. L. Scruggs, Vice-President of  
the Springs Cotton Mills, Lancaster, S. C.

Addition being built to Plant No. 1—Springs Cotton Mills, Lancaster, S. C. Building was completed in 1950

When Mr. Scruggs ordered more than 580,000 board feet of Koppers Pressure-Treated Lumber, he expected good service. And he wasn't disappointed.

### NOT A SINGLE REJECTION

Here's what he wrote after the new addition to his plant had been completed: "We wish to tell you that this is one of the few large lumber orders that we have ever placed which was completed on time and without a single rejection. We consider the service rendered and quality of material unusually good."

### COSTLY DELAYS ELIMINATED

Koppers makes every effort to deliver

pressure-treated lumber when promised, thus doing away with costly delays in construction. And Koppers, by chemical impregnation, changes the characteristics of wood so that it will stand up under your particular conditions. For example, Koppers can make wood resistant to decay, termite attack, marine borers—can even make it fire-retardant if desired.

### WRITE FOR QUOTATIONS

Get in touch with us. We will gladly furnish quotations on Koppers Pressure-Treated Wood. And our advice is available as to how wood can be made to serve you better.

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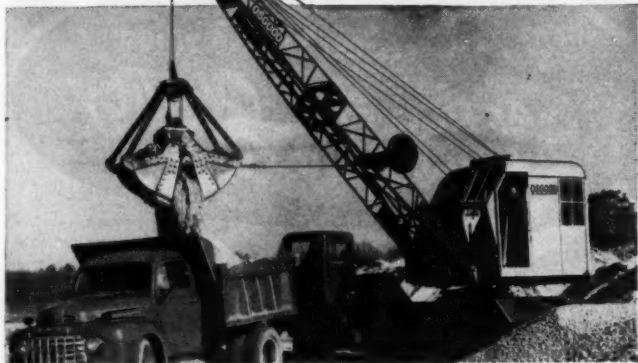
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MARION, OHIO

AFFILIATED WITH THE GENERAL EXCAVATOR CO.

POWER SHOVELS, CRANES  
DRAGLINES, CLAMSHELLS  
PILE DRIVERS & BACK HOES  
CRAWLERS & MOBILCRANES  
DIESEL, GASOLINE OR  
ELECTRIC POWERED  
CAPACITIES 1/2 TO 25 CU. YD.

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**EQUITABLE EQUIPMENT CO.**

410 Camp St., New Orleans, La.

**E. C. RAY MACHINERY CO.**

2001 E. Texas St., Bossier City, La.

## Texas Road Opening

(Continued from page 17)

625-2-2, 1,955 miles, Navasota River bridge and approaches, north of Groesbeck, Highways 14 and PR 35, Callan Construction Co., Waco, \$123,573;

Washington—S-1401 (2), 3,617 miles grading, structures, base and surfacing, FM 1155, from U. S. 290 at Chapel Hill northeast, M. E. Ruby & N. L. Larson, San Marcos and Austin, \$69,302;

Henderson—S-1633 (1), 5,834 miles grading, structures, base and surfacing, FM 1615, from junction with Highway 19 south of Athens to intersection, E. W. Hable & Sons, Corsicana, \$73,965;

DeWitt—S-1668 (1) and R-715-3-1, 8,339 miles grading, structures, base and surfacing, FM 108, from Highway 119 northwest of Yorktown toward Nopal and northwest of Highway 119 to Gonzales County line, Dudley R. Cloud & Son, San Antonio, \$107,525;

Wharton—V-1305-3-1, 2,811 miles grading, structures, base and surfacing, FM 1164, U. S. Highway 90-A, west of East Bernard southeast, J. W. Perry, San Antonio, \$47,393;

Madison—R-1401-1-1, 4,434 miles grading and structures, FM 1372, from FM 39 south of North Zulch to east of county road, D. H. Buchanan Construction Co., Temple, \$12,167.

## Arkansas Road Proposals

**Above \$2,000,000**

(Continued from page 12)

State Highway 4, Section 8, Bucton Construction Co., Hazen, \$52,046;

Conway—Job 8304, 4,670 miles of grading, minor drainage structures, crushed stone base course and shoulders, asphaltic concrete hot mix base and surface courses, on Plummerville-Menifee Road, F. A. P. F. 1-261(6) and F. I. 51(3), State Highway 64, Section 7, Ben M. Hogan, Little Rock, \$334,160;

Johnson—Job 8310, 4 miles crushed stone base course and double bituminous surface treatment on Clarksville-Northwest Road, Highway 103, Section 1, Southeast Construction Co., Pine Bluff, \$44,293;

Washington—Job 9211, 554 miles of grading, minor drainage structures and portland cement concrete pavement and widening on Fayetteville Connection Road, F. A. P. F. 254(6), State Highway 71, Sections 16 and 17, Forsgren Brothers, Fort Smith, \$147,038;

Craighead—Job 10416, 10,533 miles grading, minor drainage structures, gravel base and bituminous surface courses and one treated timber pile and reinforced concrete deck bridge on Lake City-Green County Line Road, State Highway 135, Section, Bucton Construction Co., Hazen, \$196,243;

Randolph—Job 10419, 5 miles of crushed stone base course and double bituminous surface treatment on Pochontas-Fourche Creek Road, State Highway 115, Section 1, Mode-McCracken Co., Conway, \$49,608;

Logan—Job 4378, 2,899 miles grading, minor drainage structures and crushed stone surface course on Driggs-Paris Road, F. A. P. S-96(3), State Highway 109, Section 2, R. H. Hammock, \$77,154.

# Southern Construction Projects

(Typical and Important Reports Excerpted from Daily Construction Bulletin)

## ALABAMA

**ALABAMA POWER**—Company plans expenditure of \$100,483,760 in years 1951 through 1953 to raise generating capacity to 1,384,000 kilowatts; approx. \$55,700,000 will go for new generating facilities; sixth and seventh units, at Gorgas steam plant west of Birmingham; third unit, 40,000 kilowatts, at Chickasaw steam plant in S.W. Alabama; fourth unit at Martin Dam, near Tuskegee, of 5,000 kilowatts, and first of two 125,000 kilowatt units at Barry steam plant near Mt. Vernon.

**ALBUQUERQUE**—Pikens County Hospital Authority plans 30-bed hospital, \$250,000.

**ATHENS**—City has sketches in progress for City Hall, \$250,000.

**BESSEMER**—Board of Education plans \$1,200,000 school program.

**BIRMINGHAM**—West End Methodist Church, Congregation plans educational building, \$150,000.

**BIRMINGHAM**—Burial Service of Alabama let contract to Holt Rast & Assoc. at \$147,000 for funeral home.

**BIRMINGHAM**—Hayes Aircraft Corp. let contract to Cain Roofing & Sheet Metal Co., \$443,589, for reroofing municipal airport.

**BOAZ**—Housing Authority let contract to Perusini Construction Co. of Birmingham at \$452,299 for 60-unit housing project.

**DECATUR**—Wolverine Tube Division let contract to B&M Construction Co. of Oklahoma City, \$120,000, for addition to plant, \$120,000.

**DOTHAN**—Houstan County Hospital Association plans \$750,000 hospital.

**DOTHAN**—Southside Baptist Church Congregation will construct Sunday School building, \$100,000.

**EAST GADSDEN**—C.I.O. Rubber Workers let contract to Laybourn & Son Construction Co. at \$111,427 for hall.

**ENTERPRISE**—First Baptist Church Congregation plans auditorium, \$200,000.

**FAIRFIELD**—City approved \$365,000 bond issue for school improvements.

**FORT WAYNE**—City received low bid from B&R Construction Co., Birmingham, for sanitary sewer system, \$134,328.

**GADSDEN**—City let contract to M. H. McCartney at \$188,578 for paving.

**GADSDEN**—United Cork, Rubber Linoleum and Plastic Workers of America has N.P.A. approval for union hall, \$100,000.

**GADSDEN**—U. S. Air Force, Purchasing and Contracting Office, Mobile, let contract to Delhies & Dannon, Anniston, at \$286,373, for rehabilitation of Brookley Air Force Base.

**GANNETT**—Alabama Electric Cooperative plans new steam electric generating plant, 15,000 kilowatt capacity, 7,500 units, costing \$3,000,000.

**HARTSELLE AND MOULTON**—Joe Wheeler Electric Membership Corp. let contract at \$156,263 to Baker & Shaw, Decatur, for Hartselle REA headquarters building and at \$66,166 to Rives Construction Co., Birmingham, Ala., for Moulton headquarters.

**MOBILE**—Matheson Chemical Corp., Baltimore, Md., reported to have plans for establishing a plant for supplying materials to Courtaulds plant.

**MONTGOMERY**—State plans office building, \$3,250,000.

**MONTGOMERY**—First Methodist Church Congregation plans addition, \$200,000.

**OZARK**—Board of Education plans addition to colored school, \$160,000; addition to white school, \$185,000.

**REFORM**—Pikens County Hospital Authority plans 30-bed hospital, \$250,000.

**SALCO**—Alabama Power Co. selected Southern Services, Inc., as engineers for Plant Barry on Mobile River.

**TUSCALOOSA**—Board of Education plans industrial high school for colored, \$750,000.

**WENONAH**—State Board of Education, Montgomery, plans physical educational building, \$125,000.

## ARKANSAS

**FAYETTEVILLE**—University of Arkansas received low bid from E. V. Bird Construction Co. at \$269,999 for law school.

**LITTLE ROCK**—Funds totaling \$2,000,000 for the next four years allotted to proposed Mississippi River bridge at Helena by the State Highway Commission.

**LITTLE ROCK**—Arkansas Power and Light Company asked authority to issue \$8,000,000 first mortgage bonds for construction program for 1951.

**LITTLE ROCK**—U. S. Engineers received

low bid from Lake Charles Electric Co., Lake Charles, La., at \$687,637, for powerhouse and switchyard at Bull Shoals Dam.

**LITTLE ROCK**—Spartan Aircraft Co., Tulsa, Okla., seeking to construct a \$102,000,000 integrated aluminum plant near Little Rock.

**LITTLE ROCK**—University of Arkansas Medical School received low bid from W. B. Grimshaw, Kome Bldg., Tulsa, Okla., at \$4,504,062, for medical center, MacArthur Park; Natkin & Co., 1418 San Jacinto St., Houston, on mechanical work at \$1,685,000; Fagan Electric Co., Little Rock, on electrical work at \$394,414.

**MENA**—City Council approved \$1,174,000 bid by B&M Construction Corp. of Oklahoma City for natural gas transmission line from DeQueen to Mena and installing distribution system.

**OZARK**—Arkansas Electric Cooperative Corp. plans \$10,500,000 plant.

## DISTRICT OF COLUMBIA

**WASHINGTON**—American Security & Trust Co. has NPA approval for home for aged and infirm, \$257,600.

**WASHINGTON**—Shoreham Investment Co. has NPA approval for replacement of elevators, office building, \$173,007.

**WASHINGTON**—Architect of the Capitol let contract to Charles H. Tompkins Co., Washington, \$4,583,783, for reinforced concrete pipe tunnel from Capital Power Plant to Senate Office Building.

**WASHINGTON**—Senate Appropriations Committee approves \$4,100,000 bank stabilization program for Arkansas River.

**WASHINGTON**—District Board of Education asked for \$36,262,300 to provide education and school housing for more than 90,000 children; included in the total is \$13,088,000 for capital outlays.

**WASHINGTON**—Woodward & Lothrop Department Store announced \$700,000 renovation program for store, including tunnel under G St.

## FLORIDA

**BAY HARBOR ISLAND**—Orange State Oil Co., Miami, received low bid from Trieste Construction Co., Delray Beach, at \$123,319, for service station.

**CLEWISTON**—State Road Board is making preliminary survey of feasibility of proposed \$100,000,000 toll turnpike from Jacksonville to Miami.

**COCOA**—Corps of Engineers, Jacksonville, let contract to Zaret Construction Co., Miami Beach, at \$235,328, for launching pad No. 4 and renovation of pad No. 5, Patrick Air Force Base.

**COCOA**—Corps of Engineers, Jacksonville, received low bid from Rood Construction Corp., Coral Gables, at \$193,480, for welfare building, Patrick Air Force Base.

**DADE COUNTY**—American Airmotive Corp., Miami International Airport, Miami, received low bid from Edwin M. Green, Inc., Miami, at \$198,164, for hangar, Miami International Airport.

**FORT LAUDERDALE**—City plans recreation building—bathhouse and swimming pool, Sunland Park, \$191,000.

**HIALEAH**—County Board of Public Instruction, Miami, let contract to Thompson-Polizzi Construction Co., 300 Granello Ave., Coral Gables, at \$380,000, for elementary school.

**JACKSONVILLE**—Corps of Engineers let contract to Standard Dredging Corp., 80

Broad St., New York City, for enlarging Intracoastal Waterway, \$937,340.

**JACKSONVILLE**—Navy Department let contract to Duval Engineering & Contracting Co., 1746 E. Adams St., Jacksonville, at \$1,931,702, for additions and alterations to airfield, Naval Air Station.

**LAKE WALES**—City received low bids for sanitary sewerage improvements: Section 1, gravity lines, Langston Construction Co., P. O. Box 3031, Orlando, \$357,192; Section 2, pressure lines, Hubbard Construction Co., P. O. Box 713, Orlando, \$31,105; Section 3, lift stations, W. D. Owens Construction Co., Clearwater, \$79,400, and Section 4, treatment plant, \$249,659.

**MADISON**—Florida Power Corp. broke ground for new Suwannee River plant, east of Madison, \$6,000,000.

**MIAMI**—J. E. Jarkesy let contract to Paul Silverthorne, 129 NE 1st St., at \$121,000, for 26-unit apartment building.

**MIAMI**—Board of Dade County Commissioners received low bid from Fred Howland, etc., at \$131,367, for power house, Jackson Memorial Hospital.

**MIAMI**—South Tropical Curb Market let contract to Fred W. Lynn at \$112,000 for store.

**MIAMI**—Independent Life Insurance Co. let contract to Vincent DiCamillo, 1168 SW 1st St., at \$100,000, for office building.

**MIAMI BEACH**—North Shore Hotel, Normandy Isle, let contract to King Construction Co. for two apartment buildings, 10 units each, \$120,000.

**MIAMI BEACH**—Royal Palm Homes, Inc., let contract to Chaves Constr. Co., Miami, for 32-unit apartment building, \$100,000.

**MIAMI BEACH**—General Tire Co. received low bid from Witters Construction Co., Hialeah, at \$139,671, for service station.

**MIAMI BEACH**—All Soul's Episcopal Church Congregation let contract to J. Y. Gooch Co., Inc., Miami, at \$200,000, for church, Sunday School and Parish Hall.

**ORLANDO**—Corps of Engineers, Jacksonville, let contract to R. E. Clarson, St. Petersburg, at \$762,469, for eight buildings, Pinecastle Air Force Base.

**ORLANDO**—Public Building Services has plans in progress for Department of Agriculture Laboratory between Lake Formosa and Lake Estelle, \$275,000.

**PANAMA CITY**—Housing Authority received low bid at \$462,380 for 60-unit housing project from Eaton & Elzen Construction Co., and low bid at \$1,038,150 for Henry C. Beck, Atlanta, Ga., for 140 units.

**PINECASTLE**—Corps of Engineers, Jacksonville, let contract to J. E. W. Corp., 3850 NW N. River Drive, Miami, at \$591,418, for roads and parking area, Pinecastle Air Force Base.

**ST. PETERSBURG**—Pinellas County Board of Public Instruction, 303 Haven, plans 24-classroom elementary school and 20-classroom for junior high school.

**TAMPA**—State Road Department has announced plans for extension of Adamo Drive, \$1,500,000.

**VERO BEACH**—Indian River County Board of Public Instruction let contract to Edward G. Gleming Construction Co., at \$213,819, for Vero Beach High School.

**WEST PALM BEACH**—Sunny Seas Hotel Corp. has NPA approval for motel, \$235,000.

## GEORGIA

**ACWORTH**—Cobb County Board of Education received low bid of \$232,188 from Brittain-Pattillo, Box 481, Decatur, for additions to school.

**ALBANY**—Navy Dept. received low bid from Bailey-Sey Construction Co., Jacksonville, Fla., at \$365,690, for railroads, Marine Corps Depot of Supplies.

**ALBANY**—Navy Dept. received low bid from J. A. Jones Construction Co., Charlotte, N. C., at \$1,643,690, for site development, streets, railroad grading, water system, storm drainage, Marine Corps Depot of Supplies.

**AMERICUS**—Sumter County Hospital Authority received low bid from Horne Lumber Co., at \$148,525, for alterations and additions to colored hospital.

**ATLANTA**—Housing Authority plans redevelopment and housing program, including 400-unit, \$4,000,000 white low-rent housing project.

**ATLANTA**—Housing Authority plans 990-unit Negro housing project, \$8,653,500.

**ATLANTA**—Southern Bell Telephone &

(Continued on page 22)

## Roadbuilders Plan Trips After Convention

The American Road Builders Association, which will hold its fiftieth anniversary meeting at Houston, Texas, from January 21 to 24, 1952, plans a post-convention trip to Mexico City and its environs. Paul B. Reinhold, the roadbuilders' president, says the trip will provide an opportunity to combine business with pleasure. Reservations are to be made on a "first come, first served" basis. The convention meetings will be held in the Rice Hotel at Houston.



Above—Cantilever anchor span 480 feet long and weighing 850 tons being floated into place on the \$44,000,000, four-mile long bridge being constructed across the Chesapeake Bay. Bethlehem Steel Co., of Bethlehem, Pa., is the contractor for the 33,000-ton superstructure.

## South's Construction Valued at \$4,720,465,000

**T**ABULATION of southern construction contracts in the first nine months of 1951 as reported in the MANUFACTURERS RECORD daily bulletin, shows a total value of \$4,720,465,000. The figure is larger by \$351,313,000 than the total for the entire twelve months of last year. No other nine-month aggregate even approaches the current high level.

The nine-month figure embraces \$2,111,201,000 for industrial projects; \$792,554,000 for private building; \$674,172,000 for heavy engineering type work; \$671,203,000 for public building, and \$471,335,000 for highways and bridges. Private building registers a decrease; the others, increases.

Industrial construction in the contract stage led the several categories. A substantial percentage of the total represents the two huge atomic energy commission projects in Kentucky and South Carolina. Still larger expenditures are expected for the Savannah River development.

The \$2,111,201,000 figure is more than three times the size of the \$699,246,000 recorded in the first nine months of last year. Not including the two atomic projects, the industrial figure is twice the size of its 1950 counterpart and well above nine-month totals for such work in the prior five years when totals ranged from the \$309,251,000 of 1946 to the \$391,423,000 of 1949.

Large privately financed industrial projects have been announced for various southern locations. Among the latest are the \$7,000,000 Davison Chemical plant at Lake Charles, La., the \$8,500,000 Natrium, W. Va. project of Pittsburgh Plate Glass Co., R. G. LeTourneau's new steel plant

at Longview, Texas, and a \$6,500,000 expansion of the Houston plant of Diamond Alkali Co.

Private building, while the second largest factor in the current nine-month total, is fifteen per cent below the figure for the first nine months of last year. The current private building total includes \$643,806,000 for residential construction; \$57,151,000 for assembly buildings; \$46,328,000 for office buildings and \$45,269,000 for commercial buildings.

The \$643,806,000 for residential construction, which includes apartments and hotels, is six per cent below the figure

for similar work in the first nine months of 1951. Declines in other private building, as compared with the same period of last year, are thirty-four per cent for offices, thirty-seven per cent for assembly and forty-seven per cent for commercial projects.

The three components in the heavy engineering construction total are \$514,675,000 for dams, drainage, earthwork and airports; \$119,158,000 for sewer and water work and \$40,339,000 for federal electric projects. The dam-drainage-earthwork-airport total is up one hundred eighty-two per cent; sewer and

### SOUTH'S CONSTRUCTION BY TYPES

	September, 1951 Contracts Awarded	Contracts to be Awarded	Contracts Awarded First Nine Months 1951	Contracts Awarded First Nine Months 1950
<b>PRIVATE BUILDING</b>				
Assembly (Churches, Theatres, Auditoriums, Fraternal) .....	\$4,421,000	\$15,383,000	\$57,151,000	\$90,756,000
Commercial (Stores, Restau- rants, Filling Stations, Garages) .....	4,083,000	4,306,000	45,269,000	86,283,000
Residential (Apartments, Hotels, Dwellings) .....	33,966,000	118,752,000	643,806,000	686,519,000
Office .....	4,361,000	6,690,000	46,328,000	70,244,000
	\$46,831,000	\$145,125,000	\$792,554,000	\$933,802,000
<b>INDUSTRIAL</b> .....	\$28,873,000	\$358,970,000	\$2,111,201,000	\$699,246,000
<b>PUBLIC BUILDING</b>				
City, County, State, Federal and Hospitals .....	\$31,132,000	\$36,401,000	\$367,800,000	\$291,361,000
Schools .....	29,088,000	34,033,000	305,403,000	309,250,000
	\$60,220,000	\$70,434,000	\$671,203,000	\$600,611,000
<b>ENGINEERING</b>				
Dams, Drainage, Earthwork, Airports .....	\$22,882,000	\$62,863,000	\$514,675,000	\$179,901,000
Federal, County, Municipal Elec- tric .....	1,982,000	180,484,000	46,339,000	59,058,000
Sewers and Waterworks .....	11,924,000	14,658,000	119,158,000	165,421,000
	\$36,788,000	\$258,007,000	\$674,172,000	\$382,380,000
<b>ROADS, STREETS, BRIDGES</b> .....	\$79,840,000	\$208,293,000	\$471,335,000	\$448,553,000
<b>TOTAL</b> .....	\$252,552,000	\$1,040,829,000	\$4,720,465,000	\$3,064,592,000



water works, fifteen per cent up. The federal electric total is down drastically.

Public building's \$671,203,000 total is more than seventeen per cent above the total for the first nine months of 1950. Government building, with a total of \$367,800,000, shows a gain of twenty-six per cent. School building, however, dropped from \$309,250,000 to \$303,403,000.

Highway and bridge construction, mostly by state highway departments, totals \$471,335,000 in the elapsed months of the year. This is about five per cent higher than the level at this time last year. Texas led the sixteen states with a figure of almost ninety-three million dollars. Second in rank was the \$63,693,000 of Florida; third, North Carolina's \$45,925,000.

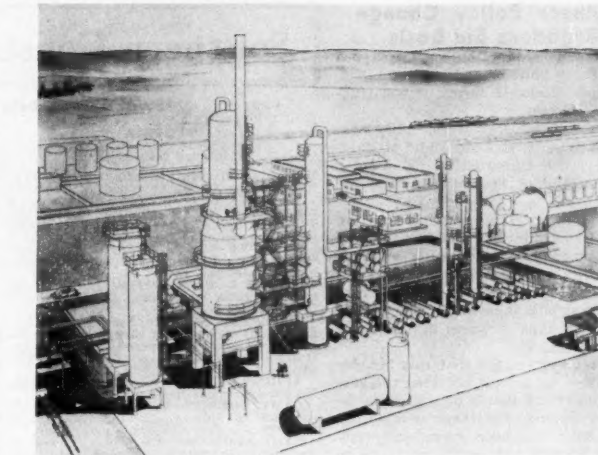
Construction in September was at the lowest point of the year so far. The total for the ninth month was \$252,552,000, this a thirty per cent decline from the level reported for the preceding month and twenty-five per cent under the figure for the same month of last year.

The five elements in the \$252,552,000 total for September were \$79,840,000 for highways and bridges; \$60,220,000 for public building; \$46,831,000 for private building; \$36,788,000 for heavy engineering construction, and the \$28,873,000 for industrial projects.

The highway and bridge total not only was the heaviest contributor to the September construction figure but was the only category showing an increase. The rise over the total for the preceding month was fifty-one per cent; over the total for the comparable month of last year, thirty-six per cent.

Public building was the second largest element in the September total. Its \$60,220,000 is down thirty-eight per cent when compared with the value for August and thirty-six per cent below the September, 1950 figure. Most of the drop was in the government building field, where the September total was \$31,132,000. School contracts totaled \$29,088,000 in September; \$29,930,000 in August.

The \$46,831,000 private building total is down about eleven per cent from the August total. Last year in the same month the figure was \$75,130,000. Included in the current aggregate are \$33,966,000 for residential work; \$4,421,000 for assembly building; \$4,361,000 for office



Above—Cities Service Co. is pushing work on the new Othorflow fluid catalytic cracker being erected at its Ponca City refinery. M. W. Kellogg Co. designed the project.

Right—Wilson Tower being erected at Corpus Christi, Texas. The building will be 18 stories high and will contain 700 offices. It will be air conditioned.

building and \$4,083,000 for commercial building.

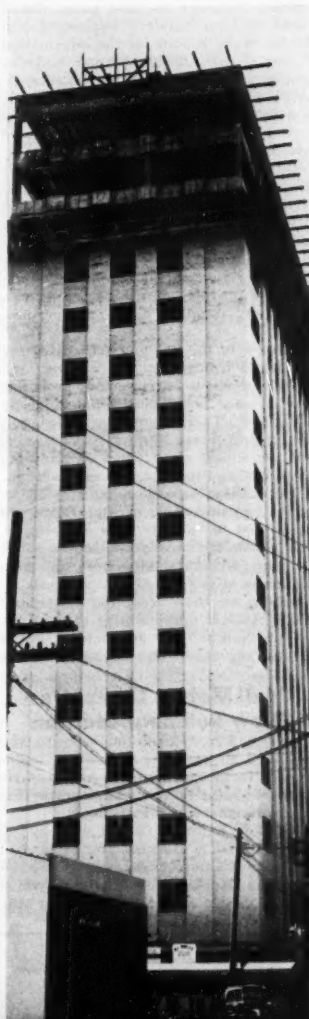
Engineering type construction in September amounted to \$36,788,000, or thirty-four per cent below the value of such work in August. Compared with September of last year, however, the total represents an increase of almost fourteen per cent. The current aggregate includes \$22,882,000 for dams, drainage, earthwork and airports; \$11,924,000 for sewers and water works and \$1,982,000 for federal electric projects.

Construction throughout the country declined in September, according to the joint report of the departments of Commerce and Labor. Outlays for most types of private building and public works were lower; factory, military and public housing continued to expand.

(Continued on page 56)

## SOUTH'S CONSTRUCTION BY STATES

	September, 1951 Contracts Awarded	Contracts to be Awarded	Contracts Awarded First Nine Months 1951	Contracts Awarded First Nine Months 1950
Alabama .....	\$ 10,129,000	\$ 82,154,000	\$ 253,746,000	\$ 135,753,000
Arkansas .....	13,357,000	127,849,000	145,679,000	78,479,000
Dist. of Col. ....	564,000	17,470,000	31,148,000	39,225,000
Florida .....	54,267,000	127,759,000	416,836,000	284,352,000
Georgia .....	13,525,000	78,048,000	163,456,000	99,896,000
Kentucky .....	7,169,000	140,050,000	437,977,000	86,954,000
Louisiana .....	25,741,000	26,586,000	346,695,000	267,275,000
Maryland .....	21,563,000	22,295,000	340,171,000	263,655,000
Mississippi .....	2,702,000	11,628,000	130,408,000	97,654,000
Missouri .....	5,412,000	17,280,000	140,456,000	200,595,000
N. Carolina .....	13,046,000	71,171,000	298,899,000	235,393,000
Oklahoma .....	5,423,000	49,760,000	66,895,000	106,190,000
S. Carolina .....	4,204,000	14,924,000	478,806,000	98,344,000
Tennessee .....	6,467,000	30,003,000	186,835,000	162,521,000
Texas .....	33,953,000	166,273,000	945,745,000	655,485,000
Virginia .....	14,812,000	13,471,000	263,471,000	191,907,000
W. Virginia .....	218,000	44,108,000	47,239,000	20,682,000
<b>TOTAL .....</b>	<b>\$252,552,000</b>	<b>\$1,040,829,000</b>	<b>\$4,720,465,000</b>	<b>\$3,064,552,000</b>



## Engineer Policy Change Broadens Bid Basis

Contractors bidding on specified types of Air Force buildings will be permitted to submit alternate forms of construction and design.

The Corps of Engineers, under Lt. Gen. Lewis A. Pick, Army Chief of Engineers, is the constructing agency for both the United States army and air force.

The policy covers construction bids on airmen's dormitories, indoctrines and overseas replacement dormitories, WAF dormitories, and mess and administration buildings. It will permit alternate construction details to be bid in competition with the designs prepared by the Corps of Engineers.

General Pick stated that this broader policy does not permit lowering the general standard of quality or size of the facility, or the use of methods or materials which have not been successfully employed. He said the engineers desire to secure the best type of construction at the lowest cost.

Standard plans are now being distributed to local builders' exchanges and similar organizations for the information of contractors, designers and material suppliers. The plans will permit prospective bidders to offer alternate construction details in the superstructure to accommodate features peculiar to proposed alternate methods of construction.

The alternate design must conform to the basic limiting dimensions, physical criteria of the building, and to general federal standards. Alternate bids must be accompanied by bidders' data, drawings and specifications in sufficient detail for evaluation. Drawings must indicate the portions of the design at variance with standard plans and specifications.

In view of the size and urgency of the construction program, the drawings and specifications to accompany proposals need be only in sufficient detail for ready evaluation. The advertising period will not be less than 30 days so as to permit the widest competition on alternate materials and methods of construction.

The bidders' alternates must in all respects be comparable in appearance and equivalent in quality, life expectancy, fire resistance, insulation, maintenance economy, structural soundness, and completeness of equipment, fixtures and accessories to those required in federal specifications. Acceptability of such alternate bids will be determined by the contracting officer and his decision will be final.

## Hall Motors Completes New Building Addition

A new \$50,000 shop addition to the O.Z. Hall Motors sales and service building in North Birmingham, Ala., was recently finished by Rust Engineering Co. of Birmingham and Pittsburgh.

The new addition, 69 feet wide by 113 feet in length is to be used for repair and painting of automobiles, and will supplement the sales and service building which was designed and constructed by the Rust firm in 1947.

# Southern Construction Projects

(Excerpted from Daily Construction Bulletin)

## GEORGIA

(Continued from page 19)

Telegraph Co., Hurt Bldg., plans expenditures of \$143,000,000 for expansion program.

**ATLANTA**—Corps of Engineers, Savannah, received low bid from J. J. Black & Co., at \$476,829, for engineer equipment processing building.

**ATLANTA**—Corps of Engineers let contract to Mion Construction Co. at \$891,346 for base maintenance shop.

**ATLANTA**—U. S. Engineer Office, Savannah, plans warehouse, Atlanta General Depot, \$1,280,000.

**ATLANTA**—Southern Natural Gas Company plans expansion of capacity serving Augusta and smaller communities in Alabama, Georgia, Mississippi, and Louisiana, \$13,641,000.

**AUGUSTA**—Housing Authority plans \$1,200,000 apartment house.

**CAMP GORDON**—Corps of Engineers let contract to Guy C. Smith, Augusta, at \$275,035, for eave and gable extensions.

**CAMP STEWART**—Corps of Engineers let contract to Ericksons, Savannah, at \$125,673, for extension to heating and utility system, central steam and air-conditioning.

**CARROLLTON**—University System Building Authority, Atlanta, plans science building at West Georgia College, \$220,000.

**CAVE SPRINGS**—Preston-Chambers Construction Co., Decatur, submitted low bid of \$222,224 for recreational building.

**CHAMBLEE**—J. L. Case Co. has NPA approval for branch warehouse, \$425,000.

**CHATHAM COUNTY**—Chatham County sold \$2,500,000 bonds to syndicate headed by Chase National Bank for public improvements.

**COLUMBUS**—First Presbyterian Church Congregation let contract to J. P. Bradfield for new unit, \$236,000.

**COLUMBUS**—Central of Georgia Railway Co., purchased 5,000,000 square feet of real estate for multi-million dollar industrial development.

**DAWSON**—Housing Authority let contract for housing project to E. A. Scott & Son of Americus, at \$598,244.

**LAGRANGE**—Board of Education let contract to Newman Construction Co. at \$1,172,000 for Southwest LaGrange Elementary School.

**MILLEDGEVILLE**—State of Georgia Public Welfare Dept. received low bid from Reese Construction Co., Vidalia, Ga., at \$988,000 for Aged Peoples Home.

**SAVANNAH**—Savannah Electric and Power Co. plans \$4,500,000 expansion of Riverdale Power Station.

**SAVANNAH**—City Council approved purchase of site on U.S. 80 for farmers' market, \$250,000.

**SAVANNAH**—Housing Authority plans new housing units in Garden Homes and Fellwood.

**WARNER ROBINS**—Board of Education let contract to Stillwell Construction Co., Macon, \$371,278, for elementary school.

## KENTUCKY

**LOUISVILLE**—Ashland Oil & Refining Co. plans sales of notes and preferred stock to raise \$12,000,000, to finance expansion of oil refining storage and transportation.

**BLACKY**—Wardrup Packing Co., Inc., has RFC loan of \$100,000.

**DANVILLE**—Arthur Geale and Horace Hendren plans 30 to 35 unit hotel and motel, \$175,000.

**LEXINGTON**—Corps of Engineers, Louisville, to issue plans and specifications about November 1, for cable processing building with necessary outside utilities, parking areas, walks and drainage, Lexington Signal Depot.

**LEXINGTON**—Corps of Engineers, Louisville, to issue plans and specifications about November 1, for fire station, all necessary outside utilities, roads, walks, and drainage, Lexington Signal Depot.

**LEXINGTON**—Corps of Engineers, Louisville, to issue plans and specifications about November 1, for salvage building with necessary outside utilities, roads, walks and drainage, Lexington Signal Depot.

**LEXINGTON**—City Commission of Lexington received low bid at \$1,456,100 for new low rent housing project, from Switzerland.

**LOUISVILLE**—Federal Housing Administration approved 500 unit apartment, \$4,500,000.

**LOUISVILLE**—SS. Simon & Jude Church

Congregation let contract to Al. J. Schneider Co. for church and school, \$215,000.

**RICHMOND**—Corps of Engineers, Louisville, to issue plans and specifications about October 28, for magazines with service drives, drainage and utilities, Blue Grass Ordnance Depot.

**RICHMOND**—Corps of Engineers, Louisville, to issue plans and specifications about October 27, for flammable materials storehouse, Incombustible, Blue Grass Ordnance Depot.

**VERSAILLES**—Standard Products Co., will occupy a \$1,000,000 plant to be built by City; will contain 150,000-sq. ft.

## LOUISIANA

**ABBEVILLE**—Mt. Carmel Mother Mary Grace plans high school, between \$350,000 & \$400,000.

**ALEXANDRIA**—Sears, Roebuck and Co., plans store, \$750,000.

**ALEXANDRIA**—St. James Episcopal Church Congregation let contract for parish house and remodeling, \$152,000.

**ALEXANDRIA**—Mississippi Power Plant received low bid at \$220,940, for extension to power plant from, Gravier & Harper.

**BATON ROUGE**—State Division of Administration let contract to H. L. Construction Co., at \$128,430 for physical education and auditorium building, campus of State Industrial School for colored.

**BATON ROUGE**—St. Anthony's Roman Catholic Church let contract to A. B. Broussard, Sr., at \$176,953 for convent.

**COTTONPORT**—Avoyelles Parish School Board, Marksview, let contract to James A. Elland, Jr., Bunkie, at \$186,970 for auditorium-gymnasium, Cottonport High School.

**COVINGTON**—August Perez & Associates, Archis, New Orleans, plans \$300,000 hospital, old Madisonville Highway, \$375,000.

**FRANKLIN**—United Carbon, Inc., Charleston, W. Va., let contract to Ford, Bacon & Davis Construction Corp., at \$2,000,000 for oil base furnace black plant.

**GREENSBURG**—St. Helena Parish School District No. 4 approved \$263,000 bond issue for school improvements.

**HOUMA**—St. Francis de Sales Church Congregation let contract to John C. Corbin, at \$153,739 for parish office and rectory.

**LAFAYETTE**—City let contract to T. Miller & Sons, P. O. Box 921, Lake Charles, at \$808,826 for sewage treatment plant.

**NEW ORLEANS**—Board of Commissioners received low bid from Farnsworth & Chambers Co., Houston, Tex., at \$930,000 for Napoleon Ave. wharf.

**NEW ORLEANS**—Orleans Parish School Board received low bid from Farnsworth & Chambers Co., Houston, Tex., at \$887,605 for negro school.

**NEW ORLEANS**—Sewerage and Water Board let contracts for following: Contract No. 328-W, laying cast iron water mains, Kelly-Geners Construction Co., at \$23,278; Contract No. 319, installing approximately 25,600 feet of 30"-24" force main, Boh Brothers Construction Co. at \$274,213 and Contract No. 318-S, furnishing steel pipe and specials for force main sewer, Bethlehem Steel Co., at \$294,220.

**NEW ORLEANS**—C. & S. Investment Company, 1229 Prytanla St., let contract to Bruns Bridge Company, \$1,700,000 for building.

**NEW ORLEANS**—St. Catherine of Sienna Church received low bid from Lionel F. Favret Co., Inc., 937 Gravier St., at \$199,876 for classroom and lunchroom, Bonnalb Place.

**RINGGOLD**—State Board of Education, Baton Rouge, received low bid from E. O. Cooley Construction Co., Ruston, at \$119,969 for new trade school for Bienville Parish.

**SCOTLANDVILLE**—State Board of Education, Baton Rouge, let contract to C-B Construction Co., Baton Rouge, at \$227,259 for music building, Southern University.

**SHREVEPORT**—William M. Barrett, Inc., received low bid from W. A. Gray Construction Co., P. O. Box 626, Shreveport at \$179,226 for office building and shop.

**WINNSBORO**—State Board of Education, Baton Rouge, let contract to Don Baxter, Sicily Island, at \$110,839 for trade school.

## MARYLAND

**MARYLAND**—Board of Education of Calvert County, in Prince Frederick, has plans in progress for Chesapeake Beach Elementary School, Chesapeake Beach and Fairview Elementary School, Chaneyville.

(Continued on page 30)



Material Service Corporation, Chicago, largest producers of ready mixed concrete in the Chicago area, depend on over 20 Link-Belt Speeders for fast aggregate handling.

AT YOUR FINGER TIPS...

## up to 25% increased output

WITH SMOOTHER, EFFORTLESS *Speed-o-Matic* CONTROLS

### LINK-BELT SPEEDER

Fingers instead of muscles do the control-work on the Link-Belt Speeder K-370. That's why operation of this Shovel-Crane is faster, surer, and easier. You get time-saving precision, too . . . "pin-point" placement of bucket, shovel or hoe, without drag, lag, jerk or jump. Control is perfect . . . you "feel" the load every inch of the way.

Operators praise the ease Speed-o-Matic controls

provide. Say they keep fresher, more alert even during long overtime. This pays off in greater output . . . up to 25% and more, and the kind of profits you like to see.

Introduced in 1936, Speed-o-Matic power hydraulic controls have proved their superiority under toughest field conditions. They are typical of the many advanced features which make the K-370 the standout performer of the 1¾-yard field. Depend on Link-Belt Speeders. They handle more work over a wider range, in less time.

**LINK-BELT SPEEDER**  
CORPORATION

12,956

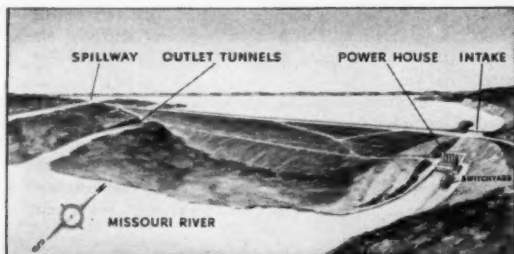
Builders of the most complete line  
of shovels, cranes and draglines  
CEDAR RAPIDS, IOWA

# Big Red

# TD 24



**BREAKIN' SHALE ON THE BERM.** TD-24 pulls a 60,000-lb. capacity spike-tooth roller, evening surface of uncompacted berms. Five TD-24s are literally "all over the place" on this big project's toughest jobs.



**ARTIST'S CONCEPTION OF OAHÉ DAM** at completion in 1959. Power works above will provide 420,000 kw with 6 generators, twice as much power as South Dakota produces at present. 78 million cubic yards of earth are involved.



**BIG RED REALLY KEEPS THE LOADS MOVING**—Whether it's pushing or pulling, TD-24's great power and speed enable it to move more pay dirt faster.



# Rolls Out the Wrinkles on Oahe Dam



Five International TD-24s star on dam project, harnessing the "Big Muddy," creating a 250-mile lake and irrigating two million South Dakota acres.

Contractor's superintendents, dirt boss and skidders at the big Oahe Dam project on the Missouri River near Pierre, South Dakota—all will bend your ear about "Big Red."

Operator Troy Hood goes on record: "Cutting on a curve, TD-24's Planet Power steering keeps both tracks pulling so you keep all power working to do a faster job."

Here's another TD-24 skinner, Jack Rank: "Son-of-a-gun really has got the power. Much easier to handle than other tractors, easier to work, easier on me. I'm on it 10 hours a day, so I know."

Dirt Foreman Sam Crawford backs them up: "TD-24 can't be beat. We haven't found anyplace it won't go."

John P. Beck, general superintendent for subcontractor Campbell-Collins, has high praise for "Big Red": "We're well satisfied with our TD-24s. Their speed in reverse certainly is an advantage as no time is lost between pushing runs behind our ten scrapers."

There they are—solid reasons for TD-24 preference by the men who move the dirt.

Take their word for it. See your nearest International Industrial Distributor for the facts behind enthusiastic TD-24 performance reports making the rounds. Find out how he backs up the power he sells with full stock of parts, factory-trained mechanics, and the latest service equipment, to keep your equipment in the high output bracket.

INTERNATIONAL HARVESTER COMPANY, CHICAGO 1, ILLINOIS

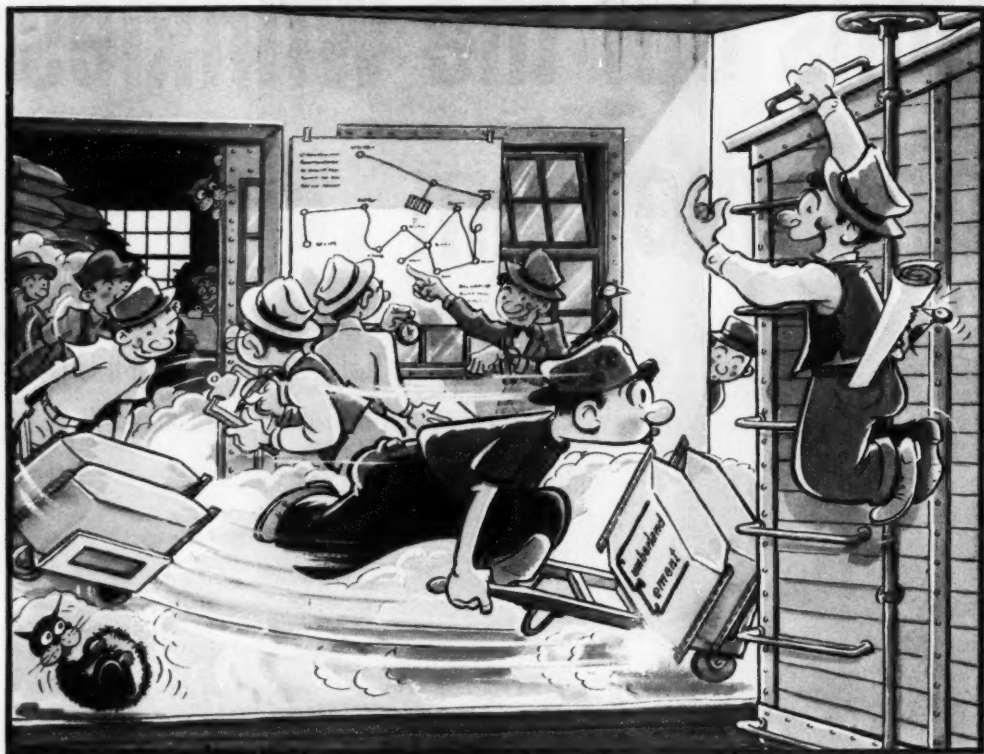


"WE LIKE TD-24 POWER," says John P. Beck of Campbell-Collins (left). Looking on are F. A. Blecker of Guy H. James Co., prime contractor; L. G. Leavitt, area engineer; and E. P. Evans, office engineer.



INTERNATIONAL

POWER THAT PAYS



# No Loitering

You want action—you want fast, efficient delivery of your order of Cumberland Cements—and that's just what you get.

Our traffic experts are specialists at speeding your order to its destination. They've got railroad rates, routes and schedules right at their fingertips to help them send your cements off in the quickest, most

economical way. But getting the orders on the road isn't their only job. They'll follow those freight cars step by step—and if there's trouble, it's their worry, not yours.

Moving a carload of cement can be quite a problem. But it's a load that we at Cumberland gladly lift from your shoulders—at no extra cost to you.

*Cumberland*  
PORTLAND CEMENT COMPANY

Chattanooga Bank Building

Chattanooga 2, Tenn.



*Portland — High Early Strength — Air Entraining — Masonry*

**SHORT**  
WHERE IT COUNTS  
...**LONG**  
ON QUALITY



Model 867 —  
63 lbs.



Model 837 —  
38 lbs.



Model 887 —  
81 lbs. —  
Sheeting  
driver head  
also available.



**New Sump Pump Dependability**

The VP4 Sump Pump is designed on a new principle of Top-Suction — won't bury itself in a muddy sump. Top-Suction also pulls gritty water away from the shaft seal — protects the seal, shaft and motor from wear — sharply reduces maintenance. "One-shot" lubrication oils entire pump for 24 hours of service.

Shorter from tool-top to handle, Gardner-Denver Paving Breakers are easier to hold! Your men move about the job faster and safer, too — thanks to the exclusive Gardner-Denver safety latch that works like the safety on a gun.

And here are some of the quality extras that make these breakers powerful "busters" on your demolition jobs:

Automatic short throw valve — virtually unaffected by wear.

Non-freezing exhaust — maintains top efficiency on cold, damp days.

Renewable chuck liner — protects both tool and breaker against loose-fitting shank.

Integral oil reservoir — insures proper lubrication to all working parts.

SINCE 1859

**GARDNER-DENVER**

Gardner-Denver Company, Quincy, Illinois

In Canada: Gardner-Denver Company (Canada), Ltd., Toronto, Canada

Atlanta  
Birmingham  
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St. Louis  
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New Orleans  
Tulsa  
Kansas City

Dallas  
Houston  
El Paso

# LEADERS

## ...IN CHOICE

HENDRIX DRAGLINE BUCKETS are specified by leading earth-moving contractors . . . operators who want their equipment to take plenty of punishment and produce plenty of profits from the time it goes into operation!



# LEADERS

## ...IN SERVICE

Operators of draglines get maximum performance with low-cost operation and maintenance, when they use HENDRIX DRAGLINE BUCKETS! Ask the man who uses one . . . he'll tell you!



**3/8 TO 40  
CUBIC YARDS**

**HENDRIX**  
*Lightweight* **DRAGLINE  
BUCKETS**

- ★ 20% lighter than other buckets, type for type.
- ★ All welded construction for greater strength and durability.
- ★ 14% Manganese Steel Chains, fittings and reversible tooth points.
- ★ Perfect balance; handles easier, fills faster, dumps cleaner.
- ★ Full Payload Every Trip; even in wet digging.

*Hendrix Buckets Without Perforations  
On Special Order Only*

**HENDRIX MANUFACTURING CO., INC.**

**MANSFIELD - LOUISIANA**



# Back of Your New

# GM Diesel Power

**3 BIG SERVICE EXTRAS**

We want every purchaser or prospective purchaser of one of our engines to know how his local GM Distributor and Dealer, with their factory-trained servicemen, stand back of the product. They in turn are backed by the knowledge that Detroit Diesel supports them strongly in their adherence to this policy.

## 1. Installation Inspection:

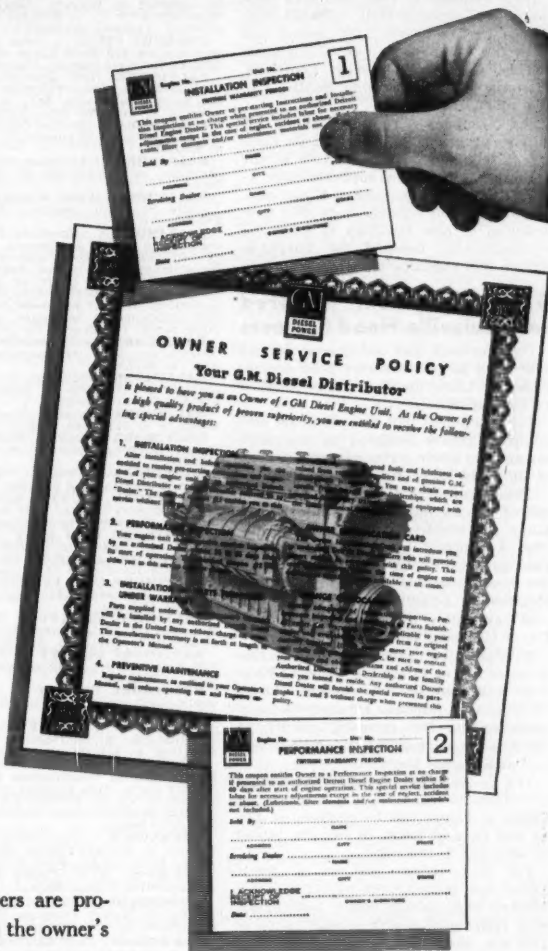
The GM Diesel serviceman inspects and checks the engine without cost to the owner; whenever possible this is done before the engine is put to work. He explains how to successfully operate the engine and the "preventive maintenance" necessary for best results in days to come.

## 2. Performance Inspection:

From thirty to sixty days after the engine has begun its job, another inspection is provided without charge. The GM Diesel serviceman makes any adjustments that may be required and tunes up the engine to its best performance.

## 3. Owner's Service Policy:

Besides the above inspections, GM Diesel owners are protected by the exceptional warranty mentioned in the owner's service policy.



ANSWER



THE CALL  
CIVIL DEFENSE

## DETROIT DIESEL ENGINE DIVISION

SINGLE ENGINES...Up to 275 H.P.

DETROIT 28, MICHIGAN

MULTIPLE UNITS...Up to 800 H.P.

GENERAL MOTORS

**DIESEL BRAVN WITHOUT THE BULK**



## \$143,000,000 1951 Program Pushed by Southern Bell

Southern Bell Telephone Company expects to spend \$143,000,000 during 1951 for expansion.

The figure includes land and buildings, \$8,190,000; central office equipment, \$28,725,000; station equipment, \$45,140,000; exchange lines, \$46,900,000; toll lines, \$10,345,000; and general equipment, \$3,700,000.

Since January 1, 1946, Southern Bell has added approximately 1,764,028 telephones in the nearly 1,000 towns and cities the Company serves in Alabama, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, and Tennessee.

The Company's record-breaking expansion program has increased its number of telephones from 1,863,204 at the beginning of 1946 to approximately 3,627,232 today—an increase of 95 per cent.

Southern Bell officials state that construction of new facilities to meet the ever-increasing demand for telephone service will continue on into the future.

## G. E. Equipment Ordered For Louisville Flood Projects

Transformers and switchgear for six new units in the extensive flood control system at Louisville, Ky., will be supplied by General Electric Co.

The equipment will be used in six new pumping plants designed to discharge sewage and storm water against the head of the Ohio River during flood stages.

These plants will be located on the land side of the existing flood protection works along the north and west sides of the city. Authorized by the federal Flood Control Act of 1938, the work is under the direction of the U. S. Army, Corps of Engineers, Louisville District. The general contractor is Central Contracting Co. of Oshkosh, Wisc.

Through the subcontractor, Marine Electric Co. of Louisville, General Electric will supply low-voltage indoor switchgear, outdoor substations, and transformers for pumping plants at Twenty-seventh and Thirty-fourth streets and at Shawnee Park.

The 60-cycle, single-phase distribution transformers will have a total rating of 6000-kva. Power will be received at 13.2 kv and used at 2.4 kv in two plants and at 480 volts in the third.

For three other stations at Fifth, Tenth, and Seventeenth streets, General Electric will furnish indoor switchgear, nine transformers with a total rating of 1125 kva, and pole-type substation equipment.

Power for these units will be received at 13.2 kv, and used at 480 volts. The equipment will be supplied to Vest & Bartlett, Cincinnati contractor.

## Savannah River Awards Set at \$124,323,242

Contracts awarded by the DuPont Company for the Savannah River development total 10,376 valued at \$124,323,242, according to an announcement by the Atomic Energy Commission.

# Southern Construction Projects

(Excerpted from Daily Construction Bulletin)

## MARYLAND

(Continued from page 22)

**ABERDEEN**—Corps of Engineers received low bid from Hadley Contracting & Construction Co., Philadelphia, Pa., at \$547,226 for artillery and fire control shop.

**ANDREWS FIELD**—Corps of Engineers, let contract to Segretti Construction Co., Washington, D. C., at \$138,410 for readiness building, Andrews Air Base.

**ANDREWS FIELD**—Corps of Engineers, received low bid from Layne & Johnson at \$292,000 for alert hangar, Andrews Air Base.

**BALTIMORE**—New Amsterdam Casualty Co., 221-25 St. Paul Place let contract to Baltimore Contractors, Inc., 711 S. Central Ave., at \$175,000 for office building.

**BALTIMORE**—Burton Construction Co., 504 Katz Bldg., will construct 22 dwellings, at \$154,000.

**BALTIMORE**—MacRose Co., Munsey Building, will construct 83 dwellings, at \$415,000.

**BALTIMORE**—Welsh Homes, Inc., 11 E. Fayette St., will construct 56 dwellings, \$504,000.

**BALTIMORE**—Board of Estimates let contract to Frank L. Carozza Construction Co., 511 Park Ave. at \$28,315 for Mount Royal transmission water main.

**BALTIMORE**—Board of Estimates let contract to Baltimore Contractors, Inc., 711 S. Central Ave., at \$3,444,600 for alterations and additions to infirmary building and other work, Baltimore City Hospitals.

**BALTIMORE**—Wadsworth Corp., 4231 Greenmount Ave., will construct 65 dwellings, at \$817,500.

**BALTIMORE**—Overbrook Realty Co., let contract to Matthew C. Bean at approx. \$330,000 for 22 dwellings.

**BALTIMORE**—Montbell Realty Co., constructing 34 dwellings, at \$272,000.

**BALTIMORE**—Property Sales Co., Court Square Building, construct 26 dwellings, at \$156,000.

**BALTIMORE**—William J. O'Meara, construct 31 dwellings, at \$186,000.

**BALTIMORE COUNTY**—Bethlehem Steel Co., Sparrows Point, will build storage building and sintering building, \$15,000.

**BALTIMORE COUNTY**—St. Agnes Church let contract to Capitol Construction Company, Inc., at \$100,000 for rectory, Old Annapolis Road near St. Agnes Lane.

**BALTIMORE COUNTY**—Frank J. O'Neill, Inc., 307 Westowne Rd., construct 33 dwellings, at \$185,000.

**BALTIMORE COUNTY**—Mulwood Construction Co., 6126 Reisterstown Road will construct 28 dwellings, at \$200,000.

**BALTIMORE COUNTY**—Meadows, Inc., 6421 Dogwood Rd., will construct 20 dwellings, at \$240,000.

**BALTIMORE COUNTY**—Julius H. Reardon, 703 Eastern Ave., will construct 52 dwellings, at \$234,000.

**BALTIMORE COUNTY**—Greenbrier Building Co. let contract to Walters Construction, at \$140,000, for 14 dwellings.

**BETHESDA**—Public Buildings Service let contract to Worthington Pump & Machinery Corp., 1140 Woodward Bldg., Washington, D. C., at \$170,000 for steam turbo electric generator unit, National Institutes of Health Bldg.

**BRUNSWICK**—State Roads Commission, Russell H. McCain, Chmn., Baltimore preparing plans for \$2,500,000 bridge across Potomac River; W. F. Childs, Jr., Ch. Engr. A. L. Grubb, Bridge Engr.

**EDGEWOOD**—Corps of Engineers let contract to Wesley Freeman, Inc., Baltimore at \$191,500 for radiological col. laboratory.

**FREDERICK**—Civil Aeronautics Administration approved award of a contract to T. Edgell Russell Co., Frederick at \$120,476 for improvements, Municipal Airport.

**FREDERICK**—Board of Education let contract to L. L. J. Keller & Sons, \$288,961 for East Frederick Elementary School.

**FREDERICK**—City sold \$900,000 storm water sewer bonds.

**HAGERSTOWN**—Washington County Board of Education received low bid from Allen F. Feiser, Taneytown, \$728,790 for Salem Avenue Elementary School.

**HYATTSVILLE**—Washington Suburban Sanitary Commission sold \$6,400,000 bond issue to Phelps, Fenn & Co., New York City,

includes \$2,500,000 for general construction in Prince Georges County; \$2,500,000 for construction of dam on Patuxent River at Rocky Gorge for expansion of water supply facilities; \$1,000,000 for storm water drainage in Prince Georges County and remainder for refunding bonds.

**OWINGS MILLS**—Department of Public Improvements, 506 Park Ave., Baltimore, let contract to John H. Lawrence Co., 2840 Huntingdon Ave., Baltimore, \$460,964 for steam distribution system, Rosewood State Training School.

**OWINGS MILLS**—Department of Public Improvements, 506 Park Ave., Baltimore, received low bid from George A. Peters & Co., 2116 Maryland Ave., Baltimore, \$148,500 for piping in new utility tunnel and power plant, Rosewood State Training School.

**PRINCE FREDERICK**—Calvert County Hospital Inc., let contract to William T. Lyons Co., Inc., Tower Bldg., Baltimore at \$812,520 for Hospital.

**ROCKVILLE**—Washington Gas Light Company plans \$6,500,000 standby gas storage plant.

## MISSISSIPPI

**AMORY**—City sold \$300,000 bond issue for waterworks improvements.

**GREENWOOD**—Board of Supervisors of LeFlore County has NPA approval for addition and alterations to Courthouse, \$226,073.

**HATTIESBURG**—State Building Commission, 1501 Woolfolk State Office Bldg., Jackson, let contract to Oden Construction Co., Box 889, at \$100,000 for stadium-dormitory at Mississippi Southern College.

**HERANDO**—Housing Authority has preliminary loans for planning and surveys for 20 unit housing project.

**JACKSON**—Methodist Orphans Home, 2003 North West St. let contract at \$148,405 for additional facilities to G. E. Bass & Company, Jackson.

**OKOLONA**—Housing Authority has preliminary loans for planning and surveys for 30 unit housing project.

**VICKSBURG**—Merchants Co. let contract to M. T. Reed Construction Co., Jackson, for commercial feed manufacturing plant, \$475,000.

**YAZOO CITY**—William R. Burk, Associated Architects & Engrs., 632 Pirates Alley, New Orleans, La. has plans and specifications complete for St. Clara Parochial School.

## MISSOURI

**BERKELEY**—Board of Education, let contract to Albers Construction Co., \$107,975 for addition and alterations to school.

**ELDORADO SPRING**—Sac-Oxage Electric Cooperative, Inc., let contract to L. P. & H. Construction Co., Linton, Indiana, at \$222,870, for 145 miles new line.

**JEFFERSON CITY**—Legislative Road Committee agreed tentatively to \$556,500,000 highway expansion program.

**JEFFERSON CITY**—Missouri State Board of Public Buildings, Forrest Smith, Gov., selected for office building, \$350,000.

**KANSAS CITY**—David Manufacturing Co. has RFC loan of \$195,000.

**KANSAS CITY**—Farm Belt Fertilizer & Chemical Co. has RFC loan of \$200,000.

**KANSAS CITY**—Webb Belting Co. has RFC loan of \$200,000.

**NORMANDY**—Normandy Osteopathic Hospital, plans hospital, \$500,000.

**ST. LOUIS**—Board of Public Service, let contract to Smith-Cooke Construction Co., 4829 Easton Ave., at \$443,340 for hangar, Lambert-St. Louis Municipal Airport.

**ST. LOUIS**—City, Board of Public Service, Frank J. McDevitt, Pres., received low bid from Fred Weber, Contractor, Inc., 7929 Alabama Ave., at \$1,078,587 for runways and taxiways, Lambert-St. Louis Municipal Airport.

**ST. LOUIS**—Risch Bldg. & Real Estate Co., will construct 48 dwellings, \$500,000.

**ST. LOUIS**—Board of Public Service approved ordinance for rehabilitation and modernization of old administration buildings and old ward buildings, City Hospital, estimated cost \$1,000,000.

**ST. LOUIS**—Y.W.C.A. plans new buildings, \$1,000,000.

**ST. LOUIS**—Board of Public Service, approved \$2,500,000 bond issue for sewer improvements.

**WARRENTON**—Reorganized School District No. 3, Warren County, Board of Edu-

cation, let contract to B. D. Simon Construction Co., 802 Broadway, Columbia, \$221,200 for high school.

## NORTH CAROLINA

**BEAUFORT COUNTY**—Local Government Commission, sold \$150,000 bond issue for school improvements.

**BELMONT**—Local Government Commission, sold \$100,000 bond issue for sanitary sewer improvements.

**BELMONT**—Local Government Commission sold \$150,000 bond issue for street improvements.

**BOONE**—Chamber of Commerce investigates possibility of new dam on Watauga River.

**BURGAU**—Four-County Electric Membership Corp., received low bid from Roy Richards Constr. Co., Carrollton, Ga., at \$338,591, for Proj. 21U.

**CHAPEL HILL**—North Carolina Sanatorium for Treatment of Tuberculosis, McCain, let contract to J. A. Jones Construction Co., 209 W. Fourth St., Charlotte at \$881,600, for tuberculosis hospital; Rowe-Goodlin-Jones, Durham, at \$106,500 on plumbing; Engineers & Sales Co., Raleigh at \$68,925 on heating; Peele Electric Co., Burlington at \$65,966 on electric; Otis Elevator Co., Atlanta, Ga., at \$58,167 on elevator; Morris & Gorrell, Raleigh at \$12,801 on air conditioning; Refrigeration Sales & Service, Raleigh, on refrigeration.

**CHARLOTTE**—Lion Oil Co., El Dorado, Ark., announced plans for a \$30,000,000 plant near Charlotte, for production of anhydrous ammonia; has Defense Production Administration approval.

**CHARLOTTE**—City received low bid from Blythe Brothers Co., 2911 Hutchison Ave., at \$223,783 for resurfacing roads.

**DREXEL**—Drexel Foundation, Inc., received low bid at \$222,200 for community center and swimming pool, from P. S. West Construction Co., Statesville.

**DURHAM**—Housing Authority names site for third public housing projects, \$2,780,000 and \$2,500,000.

**EDENTON**—Navy Department, received low bid from Ferguson Corp., Hampton, Va., at \$273,528 for fuel storage, Air Station.

**GOLDSBORO**—North Carolina Hospital Board of Control, received low bid from W. P. Lowmore & Son, Goldsboro at \$158,110 for occupational therapy building, State Hospital.

**GRAHAM COUNTY**—Board of Education, Robbinsville, let contract to William B. Dillard, Sylva, \$95,000 for Yellow Creek Grade School; Lindsey M. Gudgey, Asheville, Archt.

**GREENVILLE**—East Carolina College let contract to P. S. West Construction Co., Statesville, \$115,400 for addition to Ragdale Hall.

**HENDERSONVILLE**—Hendersonville Hospital Authority received low bid from A. H. Guion & Co., Wilkinson Blvd., Charlotte at \$477,000 for Hospital.

**HIGH POINT**—City received low bid of \$176,000 from Thompson-Arthur Construction Co., for water and sewer improvement project.

**JACKSON COUNTY**—Nantahala Power and Light Co. let contract to Harrison Construction Company, Pittsburgh, Pa. for eighth hydroelectric project.

**JACKSONVILLE**—Federal Housing Administration plans 500 unit civilian housing project, \$3,733,733.

**LEXINGTON**—Municipal Housing Commission plans \$7,000,000 addition to housing project, 397 units.

**MORGANTON**—Drexel Furniture Co. let contract to Herman-Sipe & Co., Conover, N. C., at \$153,493, for warehouse.

**RALEIGH**—Carolina Natural Gas Corp. plans natural gas to nine North Carolina cities, \$306,334.

**RALEIGH**—Board of Trustees of Rex Hospital received low bid from A. H. Guion & Co., Wilkinson Blvd., Charlotte at \$122,000 for heating plant and laundry; Albe-Marie Plumbing & Heating Co., Albemarle, at \$128,486 for heating; Troy Lumber Machine Co., Atlanta, Ga., at \$42,429 on laundry equipment; Smith & Mills, Raleigh, at \$12,885 on plumbing; Thompson Electric Co., Raleigh, on electrical work.

**RICHMOND COUNTY**—Local Government Commission sold \$750,000 bond issue for school improvements.

**ROXBORO**—City let contracts for waterworks improvements: Contract 1, C. W. Galant, 206 Latta Ave., Charlotte, at \$365,533; Contract 4, Boyd & Goforth, Pineville Road, Charlotte, \$14,850; Contract 6, Boyd & Goforth, Pineville Road, Charlotte, \$15,978; Contract 8, Peele Electric Co., Burlington, \$14,887; Contract 9, Glamorgan Pipe & Foundry, \$64,988; Contract 10, Darling Valve & Mfg. Co., \$22,135; Contract 11, T. C. Heyward, Charlotte, \$4,681; Contract 12, Wallace & Tierman Co., Belleville, N. J.; Con-

(Continued on page 32)

## Construction Record Reported For Jacksonville

The record of industrial construction recently completed or now underway in Jacksonville is described as phenomenal with a record being set that few cities anywhere can match.

The super-expressway, naval expansion, new industrial plants, expansion of established industries, the school program, the city's electric and water department expansion program, and river and other waterway developments account for the greater share of this program.

Topping the list of huge projects is the \$48,000,000 super-expressway which will give Jacksonville three new bridges and city traffic relief by providing new highways around the city.

Also of great importance to Jacksonville is the giant expansion program of the Navy. Approximately \$25,000,000 is now being expended for development and expansion of Cecil Field where a major jet base will be created, development of a carrier basin at Mayport to accommodate the Navy's largest carriers, expansion of the facilities at the Main Station and the fuel oil terminal on Trout River. Further expenditure of many additional millions by the Navy is proposed for Jacksonville and vicinity in the near future.

Another program practically completed is the \$18,000,000 expansion of Jacksonville's municipally owned electrical facilities. This program includes a new 60,000-kilowatt generating station which was dedicated earlier in the year, and numerous new substations, cable facilities and transmission systems. With a new total of 167,500 kilowatts capacity, the electric system is comparable, if not superior, to any servicing a like sized city area number of customers.

The city is also in the midst of a \$7,000,000 expansion of its municipally owned water system. New wells have been put down, new reservoirs constructed, additional pumping stations erected and new lines laid.

Another impact on the economy of Jacksonville is expenditure by school officials of \$14,500,000 in capital outlay on a city-county school improvement program. Eighteen new elementary school buildings and four new secondary school buildings are planned, along with 28 additions to existing buildings, to provide a total of 612 additional class rooms.

Lehigh Portland Cement Co. is constructing an \$11,000,000 cement plant in nearby Flagler County. In addition, and to supplement this huge industrial plant, Lehigh has purchased five and a half acres of water front property in Jacksonville on which it plans to construct storage bins and a complete packaging plant for distribution in Florida, South Georgia and for export.

Near Jacksonville, at Eastport, a \$15,000,000 pulp and paper mill of the St. Regis Paper Co. is now under construction. This mill, which will have a capacity of 100,000 tons of kraft paper a year, is expected to be in operation by 1952. It will have an annual pay roll of approximately \$3,500,000 and will probably spend another \$3,000,000 annually for services

and supplies.

Most recent additions to Jacksonville's industrial family are the following:

Lloyd A. Fry Roofing Co., has erected a new \$2,000,000 plant which commenced operations early in 1951. This plant has an annual capacity of 100,000 tons and employs 130 persons. The annual pay roll of approximately \$500,000.

Volney Felt Mills, Inc., a subsidiary of Lloyd A. Fry Roofing Co., commenced operation in the same plant at the same time. It will produce approximately 40,000 tons of felt paper a year, all of which will be used by the Fry plant.

Trumbull Asphalt Co. has completed a \$1,500,000 plant in Jacksonville for manufacture of all forms of asphalt. This plant, which also commenced operation earlier in the year, has a capacity of 125,000 tons a year.

Maryland Sportswear Co. moved its facilities from Baltimore to Jacksonville. On July 1, manufacture was started of men's sport clothing, a new type of industry for Jacksonville. Approximately 150 persons are now employed. Expansion of the facilities is underway and up to 300 persons will be employed after completion of this program.

Ivy H. Smith Co. is erecting a steel wire mill and plant for production of welded wire mesh used in pre-cast concrete products. Production is expected to start in October. Approximately 50 people will be employed.

Kieckhefer Container Co. has begun construction of a 25,000 square foot building for the manufacture of milk cartons. Estimated cost is \$200,000.

A summary of recent expansion by established industrial firms in Jacksonville is reflected in the following:

U. S. Gypsum Co., which located at Jacksonville several years ago, has built a \$500,000 addition to its plant.

National Container Corp.—\$500,000 expansion.

Wilson & Toomer Fertilizer Co.—\$500,000 addition to its plant.

Waterman Steamship Co.—This company has spent \$250,000 for expansion at the municipal docks and terminals.

Standard Oil Company—\$1,000,000 expansion.

Sun Oil Company—\$500,000 expansion. Sinclair Oil Company—\$2,000,000 for new 20-acre terminal in Jacksonville.

Westinghouse Electric Supply Co. recently completed construction of a new 30,000 square foot office, warehouse and service department.

National Biscuit Co. has started construction of a new modern warehouse of 18,500 square feet at a cost of approximately \$53,000. This new building will more than double the present Jacksonville facilities.

Plantation Foods purchased building of approximately 11,400 square feet to enlarge local facilities for handling dairy products and frozen foods, and to provide for expansion.

Merrill-Stevens Dry Dock & Repair Co.—Established recently its St. Johns

(Continued on page 56)

# Southern Construction Projects

(Excerpted from Daily Construction Bulletin)

## NORTH CAROLINA

(Continued from page 31)

tract 13, Wallace & Tiernan Co.; Purser & London, Charlotte, at \$13,445 on Contract 14. **STANLY**—Local Government Commission sold \$103,000 bond issue for school improvements.

**STATESVILLE**—Local Government Commission sold \$114,000 street improvement bonds.

**THOMASVILLE**—Mills Home let contract at \$538,561 for church, infirmary, print shop and cottage.

**TRYON**—Tryon City School Administrative Unit let contract to Merchant Construction Co., Asheville, \$103,485 for high school.

**WASHINGTON**—City School Board let contract to King-Hunter, Inc., 910 E. Market, Greensboro, at \$113,132 for P. S. Jones Colored School.

**WILMINGTON**—Tide Water Power Co. applied to North Carolina Utilities Commission for permission to borrow \$1,500,000 to finance plant improvement and new equipment.

**WILSON**—Board of Trustees let contract to Industrial Builders, Inc., Anderson, S. C., \$243,711 for addition Winstead School.

**WINSTON-SALEM**—Piedmont Natural Gas Co. let contract to Trogon Construction Co., Oklahoma City, at \$340,000 for natural gas lines in Winston-Salem and Spartanburg, S. C.

## OKLAHOMA

Tri-State Steel Corp., E. Earle Tomlin, Pres., seeking a certificate of necessity for \$1,000,000 electrical steel plant.

**BECKHAM COUNTY**—Shell Oil Co. plans natural gasoline producing facilities, \$4,500,000.

**FORT SILL**—Corps of Engineers has plans in progress, to be completed about November, for improvements to facilities, Fort Sill, \$12,000,000.

**FORT SILL**—Federal Housing Administration approved of \$5,000,000 military housing project, 215 brick duplexes, 70 2-bedroom houses.

**HOLDENVILLE**—Seamprufe, Inc., 412 Fifth Ave., New York, N. Y., selected Harold Flood, Ardmore, as Archt., for \$700,000 plant for production of nylon tricot lingerie and hosiery.

**LAWTON**—Housing Authority plans 800 family units, cost, \$8,000,000.

**LAWTON**—Board of Education let contract to Chapman Construction Co., at \$237,000 for two elementary schools.

**OKLAHOMA CITY**—Chamber of Commerce, William M. Cain, Pres., sponsoring \$15,000,000 highway-industry-railroad program.

**PONCA CITY**—Continental Pipeline Company received approval from Petroleum Administration for Defense for two pipeline projects, \$7,900,000.

**TULSA**—Public Service Company plans steam-generated electric power plant, \$9,200,000.

## SOUTH CAROLINA

Federal Housing Administration plans two large projects, \$4,000,000. Shaw field housing development and \$524,000 unit at Parris Island depot.

**AIKEN**—President Harry S. Truman asked for an additional \$484,240,000 for a plant now being built, along the Savannah River, to produce ingredients for the H-bomb.

**CHARLESTON**—Medical College of State of South Carolina, let contract to Ruscon Construction Co., 149 E. Bay St., Charleston at \$390,906 for laboratory.

**CHARLESTON**—School District No. 10, St. Andrews Parish, Stono Park, received low bid from A. Y. Willard, at \$114,551 for elementary school.

**COLUMBIA**—South Carolina Electric and Gas Co. plans multi-million dollar steam generating plant.

**COLUMBIA**—Shandon Methodist Congregation plans wing to educational plant of church, \$100,000.

**GAFFNEY**—City let contract to A. H. Guion & Co., Charlotte, N. C., \$258,890 for Peoples Creek Outfall and Disposal Plant.

**GREENVILLE**—Fountain Inn-Mauldin-Simpsonville approved \$1,000,000 bond issue for pipeline between Greenville and Fountain Inn.

**GREENWOOD**—Greenwood Mills has a cer-

tificate of necessity from National Production Authority for \$6,800,000 cotton cloth mill.

**GREENSBORO**—Board of Education let contract to R. H. Plinn, Gastonia, \$624,391 for senior high school.

**JOHNSTON**—South Carolina Regional Housing Authority has preliminary Federal Loan for 38 unit low rent housing project.

**PINOPOLIS**—Public Service Authority, Moncks Corner, let contract to Daniel Construction Co., Greenville, at \$497,745, for excavating, grading and substructure work, steam electric generating station.

**WALLACE**—Delta Fishing Co. plans addition to warehouse, \$170,000.

**WALTERBORO**—First Baptist Church Congregation, plans building, \$230,000.

**WEST COLUMBIA**—School District No. 2 let contract to Spong Construction Co., at \$155,344 for Pineview School.

## TENNESSEE

**BELLS**—Winter Garden Freezer Co., Inc. has DPA loan of \$310,000 for expansion.

**CHATTANOOGA**—Hamilton County Board of Education may vote upon \$1,000,000 bond issue for school program.

**EMBBREVILLE**—Appalachian Mining and Smelting Co. has DPA loan of \$400,000 for purchase and installation of equipment.

**ETOWAH**—Housing Authority has preliminary loans for planning and survey funds for 24 unit housing project.

**KINGSFORD**—Housing Authority received low bid from W. R. Sproules Construction Co., at \$1,863,000 for project.

**KNOXVILLE**—Miller's Inc. has N.P.A. approval for escalators, \$152,000.

**KNOXVILLE**—U. S. Engineer Office, Nashville, received low bid from Emory & Richards, Knoxville at \$346,980 for readiness hangar, McGhee-Tyson Base.

**MEMPHIS**—Memphis Light, Gas & Water Division, let contract to William Culbreath Construction Co. for central shops.

**NASHVILLE**—Housing Authority has application approved by President for housing projects, Tenn. 5-7, and 5-8, 480 and 350 units.

**NASHVILLE**—Beimont Heights Baptist Church Congregation plans auditorium, \$650,000.

**NASHVILLE**—Hunt Heater Corp. has RFC loan of \$291,000.

**TRENTON**—Housing Authority has preliminary loans for planning and surveys for 40 unit housing project.

**TULLAHOMA**—Housing Authority plans 168-unit housing project.

## TEXAS

**TEXAS**—Brazos River Conservation & Reclamation District, R. D. Collins, Treasurer, Mineral Well has filed application with Community Facilities Service for \$68,000 for advance planning for construction of Bee Mountain Dam on Brazos River; Hydro-Electric power house & appurtenances in Johnson, Bosque & Comanche Counties. Project to cost \$11,000,000.

Aluminum Company of America has NPA approval for a \$100,000,000 plant to be located near Rockdale; would use vast lignite deposits in the area as a source of power.

General Aniline & Film Co., Border Co., and Phillips Chemical Co., to form firm to be called Alamo Chemical Co.; Defense Production Authority issued a certificate of necessity for a \$38,260,000 plant Alamo planned on Houston Ship Channel, near Phillips Chemical's ammonium sulphate plant.

West Texas Gulf Pipe Line Company let contract to Gulf Sun Oil Company, Standard Oil Company of Ohio, and Pure Oil Co.; \$1,160,000 of electrical equipment from Westinghouse Electric Corp.

**AMARILLO**—U. S. Atomic Energy Commission, Los Alamos, N. M., let contract to McKinley Co., P. O. Box 1501, Lubbock at \$14,653 for steam, air and condensate return systems, Pantex Plant.

**AMARILLO**—First Baptist Church Congregation plans addition, \$1,000,000.

**AUSTIN**—City has plans in progress for new Colorado River Bridge located between Lavaca and Guadalupe Streets, \$465,000.

**DALLAS**—W. N. Corut, Jr., 5803 Greenville has NPA approval for shopping center, \$420,000.

**AUSTIN**—Austin Independent School District let contract to Lee F. Crook Construction Co., \$672,116 for Anderson High School for Negroes.

(Continued on page 34)

## Alumina Plant Project Points to Early Finish

Construction progress on current expansion at Kaiser Aluminum & Chemical Corporation's Baton Rouge, La., alumina plant indicates that increased production will begin late this year, paralleling the Company's expanding primary aluminum capacity and bauxite mining operations.

Twenty-eight new installations plus modifications to existing facilities at Baton Rouge are being made by the engineering division of Henry J. Kaiser Co. to step up alumina production from 300,000 tons a year to 540,000 tons.

Initial results of the Baton Rouge expansion, costing more than \$7,000,000, will coincide with the completion of the first of four potlines at the company's new 200,000-ton-a-year aluminum reduction plant now under construction near New Orleans.

The first new potline will begin producing primary aluminum at the rate of 50,000 pounds a year, requiring Baton Rouge's production to be increased an additional 5,000 tons per month. Potline 2 at New Orleans will be put in operation early in 1952 and potlines 3 and 4 will be in full production by mid-1952. Production of an additional 60,000 tons of alumina per year at Baton Rouge for each potline will keep pace with this construction. Baton Rouge's current production is nearly all shipped to the Company's reduction plants at Spokane and Tacoma, Washington.

Some of the modifications at Baton Rouge are also tied in closely with the processing of bauxite from Jamaica, B.W.I., where the Company has purchased or optioned about 11,000 acres of bauxite properties. Initial tests revealed that this bauxite differed considerably from that now being obtained from the Guianas in South America and could not be treated properly with existing facilities. A complete pilot plant was constructed at Baton Rouge last year to confirm a new process developed in the plant's research laboratories. Construction began at Jamaica in February, 1951 and quantity shipments of ore to Baton Rouge will begin in mid-1952.

Bauxite is delivered to Baton Rouge aboard 10,000-ton ocean-going vessels, which unload at the plant dock on the Mississippi River. The ore, in combination with lime and soda ash, then undergoes a complex refining process which removes the ore's impurities and converts it to alumina, a white powder, which is shipped to the Company's reduction plants for conversion to aluminum metal.

## Can Depot Progresses at Auburndale, Fla.

The American Can Co. has arranged to establish a can warehouse at Auburndale, Fla.

Containing 53,000 square feet of floor space, sufficient to store several million cans at a time, the building will be leased from Barton H. Smith, of Tampa. Construction of the building is being carried out by the Paul Smith Construction Co., also of that city.



# Are you turning in all your SCRAP?

*Don't wait for "George" to do it*



You'll find your local scrap dealers listed in the yellow pages of the phone directory.



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**I**F you are a steel user, this important job of getting more scrap back to the mills is directly up to you. You just cannot afford to sit idly by while the scrap shortage gets worse. For unless everyone really pitches into this job of digging out all the scrap possible, steel production is bound to suffer, and every steel user, in more or less degree, will suffer too.

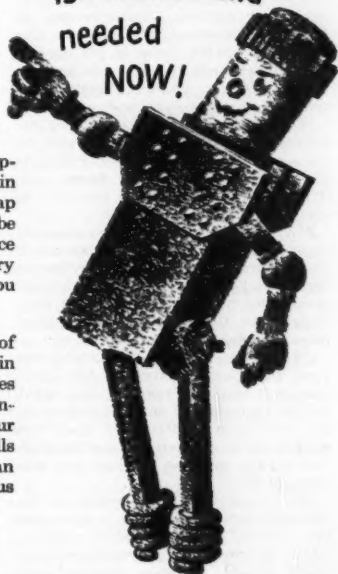
More scrap means more steel—it's as simple as that.

Right now some mills have only a bare two-days' supply of scrap on hand. Others have even less. Some steel-making furnaces already have had to shut down for lack of scrap. The situation is serious. Only you can help improve it.

By turning in every piece of worn-out equipment, every obsolete tool and machine, in fact every pound of iron and steel scrap you can comb out of your plant, you'll be helping relieve the worst scrap shortage since Pearl Harbor days . . . and the steel industry will be able to produce more of the steel you need.

Remember—it takes at least one-half ton of scrap to make one ton of steel. To maintain steel's present high production schedules requires more than 1400 carloads of industrial scrap every day. So turn in your scrap—ALL your scrap—and keep the mills rolling. This is more than a shortage. It's an emergency that vitally concerns you—and us—and the Nation.

All the SCRAP you  
can scrape up  
is needed - and  
needed  
NOW!



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but, because without SCRAP we cannot produce steel, we are asking instead for your all-out help in getting more SCRAP to the mills.

AMERICAN STEEL & WIRE COMPANY, GENERAL OFFICES: CLEVELAND, OHIO  
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UNITED STATES STEEL EXPORT COMPANY, NEW YORK

**UNITED STATES STEEL**

## Work Starts at Gabe Project of Tennessee Gas

Construction of initial units of a \$10,000,000 Tennessee Gas Transmission Co. liquid hydrocarbon recovery plant near Gabe, Ky., has been completed and operation has begun on a limited scale, says Vice-President C. S. Coates.

The plant will process a large portion of the natural gas passing through the Tennessee Gas pipeline system toward the Appalachian area and the East. The gas will be diverted through the plant and then returned to the pipeline system to continue its journey with no appreciable reduction in the high quality of the gas for fuel purposes.

Activity and production at the plant will increase later in the year as additional units are completed at the plant and at the new chemical plant of the Mathieson Hydrocarbon Chemical Corporation, which will take all the output of the Tennessee Gas plant.

When in full operation the extraction plant, commonly called a "stripping" plant, will process about 750,000,000 cubic feet of gas daily from which will be obtained approximately 380,000 gallons of liquid hydrocarbons daily, according to Joe J. King, company chief engineer. The plant will extract about 16 per cent of the ethane from the gas and substantially all the propane, butanes, hexanes and heavier hydrocarbons present.

The liquid hydrocarbon stream will be delivered by a 58-mile 8-inch pipeline to the new \$17,000,000 Mathieson Hydrocarbon plant on the Ohio River near Brandenburg, Ky., already partially in operation.

Pending completion of the chemical plant, it is receiving a limited amount of ethane, propane and heavier hydrocarbons from the Tennessee Gas "stripping" plant. This liquid stream is being fractionated at Brandenburg into liquefied petroleum gas and natural gasoline.

On completion of both plants later this year, the ethane content of the liquid stream from the Tennessee Gas plant will be increased to design quantity. At the Mathieson Hydrocarbon plant the stream will be separated by fractionation into ethane, propane, butanes and natural gasoline.

The ethane will then be ready for the cracking furnace, where it is converted into several gases including ethylene, which becomes the material from which stems almost countless chemical end products.

By-products will include propane, butanes and natural gasoline. Chemicals will include ethylene glycol (anti-freeze), ethylene oxide, and other products. The products of the plant will be used in the manufacture of synthetic fibers such as orlon and dyne; hydraulic fluids, bottle gas, synthetic rubber, and high-octane aviation gasoline.

## Petroleum Book Issued

The Ninth Edition of Petroleum Facts and Figures, one of the oil industry's most authoritative compendiums on its vital statistics, is now off the press, and is being distributed.

# Southern Construction Projects

(Excerpted from Daily Construction Bulletin)

## TEXAS

(Continued from page 32)

**AUSTIN** — Public Improvements Review Board and City Manager Chas. C. Ford propose \$36,000,000 bond fund street improvements.

**AUSTIN** — Austin Independent School District plans West Junior High School, \$1,200,000.

**BROWNSVILLE** — City, H. L. Stokely, plans Fort Brown Memorial Civic Center, \$800,000.

**BRYAN** — Corps of Engineers, Galveston, let contract to Stanley W. Newman Co., Inc., Mobile, Ala., at \$510,060 for facilities, buildings, Bryan Air Force Base.

**BURNET** — State Planning & Resources Board plans resort hotel at Inks Lake, \$1,400,000.

**CORPUS CHRISTI** — Sunray Oil Corp. plans new 25,000-barrel catalytic cracking refinery, \$10,000,000.

**CORPUS CHRISTI** — City sold \$1,450,000 bond issue for general purposes.

**DALLAS** — City let contract to E. H. Reeder Construction Co., 2128 Hawes, at \$451,748 for White Rock Trunk Sewer Line.

**DALLAS** — Dallas Independent School District let contract to A. W. Brunson at \$446,054 for Elisha M. Pease Elementary School.

**DALLAS** — Dallas Independent School District let contract to A. H. Ewing's Sons, Inc., 1924 Tarrant Place, at \$452,721 for Jeff Davis Elementary School.

**DALLAS** — S. H. Lynch & Co., 2101 Pacific, let NFA approval for office building, \$638,250.

**DALLAS** — Dallas Power & Light Co. has City Council approval for spending \$8,900,000 to install 60,000-kilowatt generator in Griffin St. plant.

**EL PASO** — Corps of Engineers, Albuquerque, N. M., let contract to Robert E. McKee, Inc., P. O. Box 562, El Paso, \$884,800 for five pump houses, Biggs Air Force Base.

**FORT WORTH** — City approved issuance of \$800,000 bond issue for garbage incinerators; \$500,000 bond issue for fire station; \$200,000 for Children's Museum, and \$500,000 for recreation.

**HOUSTON** — Houston Independent School District let contract to Marquette Construction Co. at \$419,888 for Denver School.

**HOUSTON** — Harris County Navigation District plans wharf, \$1,000,000.

**HOUSTON** — City selected engineers for San Jacinto River Dam, Canal and Filtration Plant as follows: Ambursen Engineering, M & M Bldg., Houston, for dam; Freese, Nichol's & Turner, National Standard Bldg., Houston, for filtration plant and Lockwood & Andrews, Union National Bank Bldg., Houston, for intake structure, river pumping plant, canal and discharge main from filtration plant.

**HOUSTON** — Houston Independent School District let contract to American Construction Co., Rusk Bldg., at \$363,100 for alterations and additions to San Jacinto High School.

**LAREDO** — Laredo Independent School District plans voting in November on \$1,500,000 bond issue for school program.

**LONE STAR** — Lone Star Steel Co. let contract to Westinghouse Electric Corp., Pittsburgh, Pa., at \$800,000 for electrical equipment for new rolling mill under construction.

**LUBBOCK** — Lubbock Independent School District received low bid from Tidmore Construction Co., 1902 Ave. M, Lubbock, \$642,443, for R. W. Matthews Junior High School.

**LUBBOCK** — Lubbock Memorial Hospital let contract to Robert E. McKee General Contractor, Inc., 2708 Inwood Road, Dallas, at \$1,941,219 for hospital and nurses' home; Martyn Brothers, Inc., 1000 St. Louis, Dallas, at \$600,260 for heating, ventilating and air-conditioning and plumbing; Harman Electrical Construction Co., 3113 McKinney, Dallas, at \$160,122 for electrical work.

**LUBBOCK** — Lubbock Independent School District let contract to Tidmore Construction Co., 1902 Ave. M, \$642,443 for R. W. Matthews Junior High School.

**MATAGORDA COUNTY** — Ohio Oil Co. and Sun Oil Co. plans natural gas plant serving North Markham and North Bay City Fields, \$4,100,000.

**MIDLAND** — Midland National Bank has final plans for new banking home, \$490,000. **MIDLAND** — Midland Independent School District let contract to Houston Hill, P. O. Box 1466, \$607,500 for North Junior High School.

**MT. PLEASANT** — City approved \$875,000 bond issue for water and sewer improvements.

**PANHANDLE** — Panhandle Independent School District plans elementary school and gymnasium, \$450,000.

**FORT ISABEL** — Cameron County Fresh Water Supply District No. 1 received low bid from Dodds & Wedegartner, San Benito, \$421,000 for water supply improvements.

**SAN ANTONIO** — Corps of Engineers, Galveston, selected Chase & Baen, 1309 Anita Ave., Houston, Archts.-Engrs., to prepare plans for dormitories, mess halls, site planning at Lackland Air Force Base, \$16,000,000.

**SAN ANTONIO** — State Board for State Hospitals and Special Schools plans Tuberculosis Building, San Antonio State Hospital; \$1,500,000.

**SNYDER** — Scurry County plans 50-bed hospital for Scurry County Hospital, \$800,000.

**STAMFORD** — City let contracts for Paint Creek Dam and Water Supply Line, E. E. Farrow Co., Dallas, for 18-inch pipe line at \$438,354 and L & S Contractors, P. O. Box 235, Cleburne, for dam at \$289,365.

**WACO** — Corps of Engineers, Galveston, received low bid from Capano County Homes, Inc., Memphis, Tenn., at \$3,660,000 for Wherry military housing project, 500 units, James Connally Air Force Base.

**WACO** — Housing Authority has final plans in progress for housing project, Tex. 10-3, 150 unit housing project, \$2,872,000.

**WICHITA FALLS** — Corps of Engineers, Tulsa, Okla., let contract to Eckert-Fair Construction Co., Dallas, at \$1,988,000 for academic building, Sheppard Air Force Base.

## VIRGINIA

U. S. Corps of Engineers received low bids from Nello L. Teer of Durham, N. C., at \$727,748, for 1.5 miles of highway relocation, and The Sutton Company, Inc., of Radford at \$425,806 for relocation of 1.4 miles of railway track of the Atlantic & Danville Railway, in connection with Bugs Island Project.

**ALEXANDRIA** — Herbert Bryant, Inc. has NFA approval for warehouse, \$138,956.

**ARLINGTON** — Ruon-Henderson, Inc., has NFA approval for restaurant, \$220,800.

**ARLINGTON COUNTY** — Arlington County let contract to Thompson-Starratt Co., Inc., 444 Madison Ave., New York, N. Y., at \$2,874,810 for sewage treatment plant.

**BURKE** — Department of Commerce, Civil Aeronautics Administration selected 4520 acres for proposed \$14,000,000 airport.

**CHARLOTTESVILLE** — University of Virginia plans expenditure of \$3,785,000 for school building.

**ELIZABETH CITY COUNTY** — Corps of Engineers let contract to Vanguard Construction Co., Norfolk, at \$177,204 for navigational aids Langley Air Force Base.

**FAIRFAX** — Board of Education let contract to Sharpe & Hamaker, Arlington, \$312,022 for West Lawn Elementary School.

**FAIRFAX COUNTY** — Board of Education let contract to Eugene Simpson & Brother, Alexandria, \$382,576 for addition to Mt. Eagle Elementary School.

**FALLS CHURCH** — St. James Catholic Church Congregation has NFA approval for \$260,000 addition.

**FALLS CHURCH** — Falls Church Presbyterian Church Congregation plans building, \$150,000.

**FORT BELVOIR** — Corps of Engineers, Washington, D. C., received low bid from Allen C. Minnix, Washington, D. C., at \$121,400 for floating bridge components.

**HARRISONBURG** — Madison College let contract to Nielsen Construction Co., Harrisonburg, at \$530,563 for science building.

**HENRIK COUNTY** — Board of Education let contract to J. Kennon Perrin Co., Richmond, at \$188,336 for Varina Elementary School.

**LANGLEY FIELD** — National Advisory Committee on Aeronautics received low bid from Patterson, Emmerson & Comstock Co., Hampton, at \$232,590 for extending Stratton Road Sub-station and electrical utilities, for supersonic tunnel laboratory.

**LYNCHBURG** — Virginia Synod of Presbyterian Church plans \$450,000 Presbyterian home for aged.

**NORFOLK** — Navy Department, Public Works Office, received low bid from Tide-water Construction Co., Norfolk at \$1,774,003 for additions to aviation gasoline distribution system, Craney Island Facility.

**NORFOLK**—Virginia Beach Baptist Church Congregation plans building, \$100,000.

**NORFOLK**—Navy Department let contract to William A. Jaeger Construction Co., Norfolk at \$109,943 for alterations to Building No. 2.

**NORFOLK COUNTY**—Board of Education received low bid from Thortington Construction Co., Richmond, at \$327,700 for South-eastern Elementary School.

**NORFOLK**—City received low bid from A. J. Jones Construction Co., at \$1,101,242, for powerhouse at Philipott Dam on the Smith River.

**NORFOLK**—Board of Education let contract to Carter-Hassell Contracting Co., \$845,000 for Roberts Park Elementary School.

**NORFOLK COUNTY**—Board of Education let contract to Robert R. Marquis, Portsmouth, at combination bid of \$1,047,908 for Oakwood Elementary School and Norview Elementary School.

**PETERSBURG**—Virginia State College let contract to A. H. Ewing Sons, Inc., Richmond, \$154,000 for faculty apartments.

**PORTSMOUTH**—Navy Department let contract to Grannis, Sloane, Thompson & Street, Charlotte, N. C., at \$2,643,000 for warehouses, Forwarding Depot.

**RICHMOND**—Manchester Board & Paper Co. let contract to Doyle & Russell, Richmond, at \$100,000 for storage plant.

**ROANOKE**—City Council Off-Street Parking Committee submitted to City Planning Commission plans for a \$4,000,000 ground-level off-street parking project.

**ROCKINGHAM COUNTY**—Board of Education let contract to English Construction Co., Altavista, \$966,666 for Broadway High School.

**SOUTH NORFOLK**—Chilean Nitrate Sales

Corp. has NPA approval for rebuilding storage warehouse, \$350,000.

**VIRGINIA BEACH**—Board of Education let contract to Doyle & Russell, Norfolk, \$847,722 for Virginia Beach High School.

**YORKTOWN**—Navy Department received low bid from Laburnum Construction Co., Richmond, at \$1,616,569, Item 1, for additional facilities, Naval Mine Depot.

#### WEST VIRGINIA

The Senate Appropriations Committee approved \$4,000,000 for navigation work on Monongahela River, including Morgantown Lock and dam.

West Virginia Pulp & Paper Co., 230 Park Ave., New York, N. Y., filed with Securities and Exchange Commission a registration statement covering \$20,000,000 of debentures; proceeds to be used for improvements and additions to its plant and equipment.

**CHARLESTON**—Fruehauf Realty Corp., of Fruehauf Trailer Co., has NPA approval for Garage, \$175,000.

**CHARLESTON**—Central Kentucky Natural Gas Co. asked Federal Power Commission for authority to build 18.6 miles of pipelines.

**CHARLESTON**—Federal Housing Administration plans low cost housing project, \$4,000,000.

Westinghouse Electric Corp., Gwilym A. Price, Pres., New York, N. Y., announced plans for a \$296,000,000 expansion program extending beyond 1953; will increase productive capacity 50 per cent.

West Virginia Pulp and Paper Co., New York, N. Y., announced plans for a \$50,000,000 expansion program during next few years.

Executive committeemen are E. C. Peele, of Burlington, N. C.; J. Austin Griffith, of Greenville, S. C.; J. W. Dunn, of Columbia, S. C.; Paul Jordan, also of Columbia, and Ralph Pressley, of Asheville, N. C.

Mr. McGregor is associated with the Webb Electric Co.; Mr. Pancoast, with Bryant Electric Co.; Mr. Hanks, with Southern Electric Service Co.; Mr. Bolen, with Electrical Contracting and Engineering Co.; Mr. Moseley, with R. H. Bouligny, Inc.; Mr. Peele, of Peele Electric Co.; Ralph K. Robinson, of Robinson Electric Co.; Mr. Griffith, with Dunn Electric Co.; Mr. Jordan, of Jordan Electric Co.; Mr. Pressley, with Hayes & Lunsford Electric Co., and Mr. Vaughn, of Modern Electric Co.

## Kentucky Makes Road Awards Amounting To \$1,929,012

Kentucky Highway Commissioner W. P. Curlin early last month announced award of contracts totaling \$1,929,012 for construction work on 270 miles of roads in 33 counties.

Contracts were awarded for 37 miles of federal-aid construction at \$754,142 and 200 miles of construction financed by the state alone at \$939,443. Rural roads contracts, financed by the 2-cent gas tax totaled \$235,427 for 33 miles of construction work.

Projects financed by state and federal funds were listed in the following counties:

Barren—Glasgow-Flippin road, bituminous surfacing, 6.9 miles, Robert M. Robinson, Owensboro, \$94,451;

Clinton — Albany-Rolan road, grade, drain, and traffic bound surface, 3.5 miles, Sam Nally Co., Bardstown, \$54,676;

Harlan—Closplint-Holmes Mill road, bituminous surface, 4.1 miles, Kentucky Virginia Stone Co., Middlesboro, \$61,627;

Henderson — Henderson-Owensboro (Ky. 54) road, grade, drain, and traffic bound surface, 1.2 miles, H. B. Stanley, Ltd., Beaver Dam, \$71,466;

Logan—Lewisburg-Quality road, bituminous surface, 7.9 miles, Robert M. Robinson, Owensboro, \$107,600;

Monroe — Flippin-Fountain Run road, bituminous surface, 5.5 miles, Southern Quarries and Contracting Division of N. Y. Coal Sales Co., Columbus, Ohio, \$89,859;

Ohio and Butler — Cromwell-Aberdeen road, bituminous surface, 7.9 miles, State Contracting and Stone Co., Hartford, \$202,172;

Warren — Bowling Green-Morgantown road, culvert and traffic bound surface approaches at Jennings Creek, 0.3 miles, Sam Nally Co., Bardstown, \$31,518;

Warren—Bowling Green-Richardsville-Morgantown road, bridge and traffic bound surface approaches over Claylick Creek, Sam Nally Co., Bardstown, \$40,769;

Projects financed by the state alone were listed in the following counties:

Breckinridge — Hardinsburg-McQuady road, bituminous surface, 6.5 miles, State Contracting and Stone Co., Inc., Hartford, \$44,292;

Breckinridge — Hardinsburg-Union Star-Mooleyville road, bituminous surface, 12.4 miles, R. B. Tyler Co., Louisville, \$122,839;

Boone — Florence-Burlington-Belleview road, bituminous surface, 6.5 miles, H. K. Williams, Louisville, \$46,356;

Crittenden — Mexico-Dycusburg road, bituminous surface, 5.2 miles, Ruby Construction Co., Madisonville, \$41,068;

Hopkins — Madisonville-Central City road, bituminous surface, 3.2 miles, Ruby Construction Co., Madisonville, \$25,041;

Johnson—Paintsville-Inez road, traffic bound surface, 4 of a mile, Winston Ford Co., Prestonsburg, \$29,184;

Larue — Badger-Attila-Cleanings road, grade, drain, and traffic bound surface,

(Continued on page 54)

## Electrical Contractors Elect

New officers elected at the Fontana Village meeting of the Carolinas Chapter of the National Electrical Contractors Association are:

W. C. McGregor, of Anderson, S. C., president;

H. R. Pancoast, of High Point, N. C., vice president;

J. W. Vaughan, of Durham, N. C., second vice president;

W. W. Hanks, of Charlotte, N. C., secretary;

Ralph K. Robinson, of Charlotte, treasurer;

J. C. Bolen, of Charlotte, governor;

C. W. Moseley, of Charlotte, national Counsellor.



Above—Among new officers of the Carolinas Chapter of the National Electrical Contractors Association are, left to right, W. C. McGregor, H. R. Pancoast, W. W. Hanks, J. C. Bolen, Charlotte, C. W. Moseley and E. C. Peele. Mr. McGregor is president.

## Oklahoma Commission Lets U. S. 77 Improvement

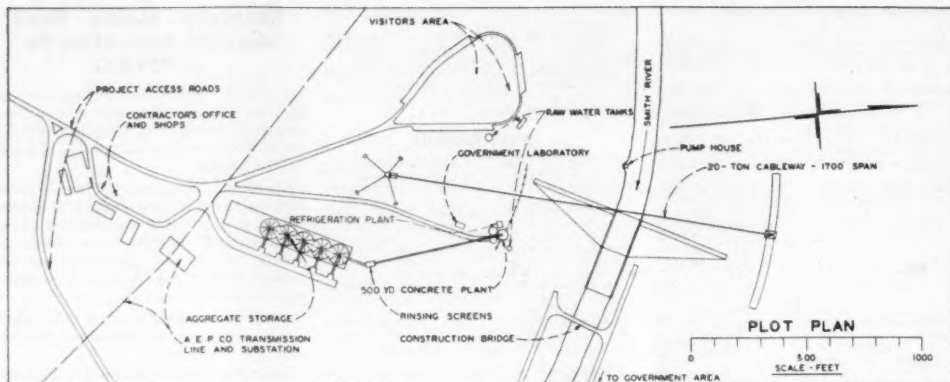
Proposal to extend the Norman, Okla., million dollar plus four-lane project on U. S. Highway 77 north to the Oklahoma county line has been programmed by the Sooner State highway commission.

The present road will be widened and resurfaced from a mile north of Moore where the Norman job begins, and a 24-foot parallel road will be built adjoining the old road. More than six miles of construction will be involved.

## Engineer Awards Made For 4-Lane Highway

The Oklahoma state highway commission has authorized engineering contracts on 23.3 miles of four-lane proposed along the state system in a new industrial area being developed on the west and southwest edge of Oklahoma City.

Also authorized for engineering contract was a four-lane highway in Tulsa leading from the new million dollar Fifty-First Street Arkansas river bridge east to State Highway 33.



## Philpott Dam Nears Finish on Smith River

By  
**William D. Nowlin**

Resident Engineer  
Corps of Engineers

Philpott Dam, one of eleven proposed projects for the Roanoke River Basin, is located on the Smith River in northwest Virginia about 50 miles south of Roanoke. The dam is a concrete gravity type structure 220 feet high, 892 feet long

and contains about 325,000 cubic yards of concrete. Actual construction was started in 1948 with letting of contracts for an access highway and excavation of the river abutments.

Construction of the dam was started in July of 1949 by a combine of Bates & Rogers Corp. of Chicago, Ill., Morrison-Knudsen Co. of Boise, Idaho, and Peter Kiewit Sons' of Omaha, Nebr. First concrete was placed in March 1950; completion of the dam is scheduled for Oc-

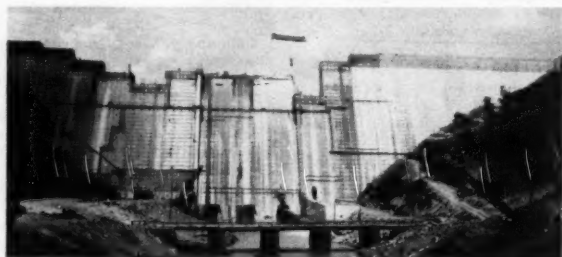
tober. Construction of the powerhouse is scheduled to begin in the fall of this year with final completion contemplated late in 1952.

### Construction Plant Described

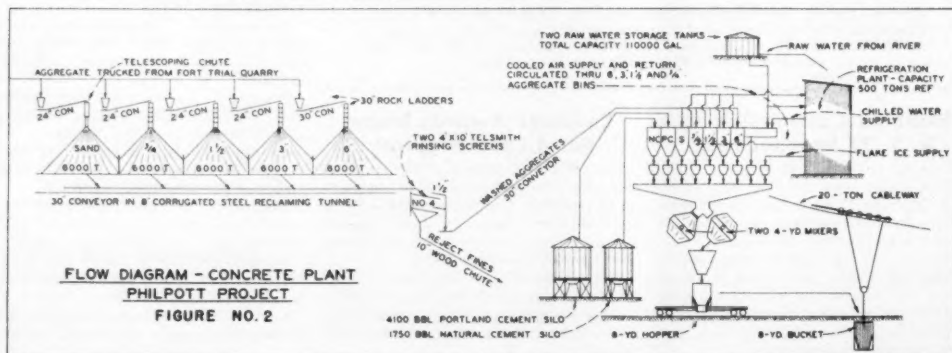
Aggregate for construction of the dam was furnished by Lambert Brothers, Inc., of Knoxville, Tenn., from the Fort Trial Quarry located about nine miles from the dam site. Figure 1 is a flow diagram of the crushing and screening plant and lists the various equipment used in quarrying and processing the aggregate.

Equipment and procedure are that normally used on similar jobs with the possible exceptions of an Ingersoll Rand Quarry Master type rock drill which has a drilling rate of from 12- to 16 feet per hour for a 6-inch hole in a very hard, abrasive granite rock and a Sturdevant air separator for removing the excess fines from a dry processed sand.

The primary crusher, a 30 by 42-inch jaw, is small for the production maintained and necessitated the blasting of the stone in the quarry to smaller sizes than would have been required with a larger primary crusher. Processed aggregate is hauled from the quarry to the dam site by trucks carrying from 10 to 12 tons per load.



Above—Philpott dam, shown as it nears completion on the Smith River about 50 miles south of Roanoke, Va. The dam is a concrete gravity type structure 220 feet high, 892 feet long. It contains about 325,000 cubic yards of concrete. Flow diagram of the concrete plant is shown below. The plot plan layout is shown at top of page.





### Concrete Mixing, Refrigeration

The concrete mixing and refrigeration plant and accessories were furnished by the C. S. Johnson Co. Refrigeration equipment was manufactured by York Refrigeration Corp.

The mixing plant is the 500-yard automatic type commonly used on large jobs and has two tilting type mixers of four cubic yard capacity each. Maximum capacity of the plant is approximately 160 cubic yards of concrete per hour with a mixing period of 2½ minutes. Figure No. 2 is a flow diagram of the concreting plant.

The refrigeration plant, which furnishes chilled water and flake ice for the mixers and cooled air to circulate through the aggregate storage bins in the mixing plant, has an installed capacity of approximately 500 tons of refrigeration. There are four compressors so connected that from one to four can be used depending upon the requirements. The ice is manufactured by two Flake Ice machines having a total capacity of approximately 30 tons in 24 hours. Figure No. 3 is a flow diagram of the Refrigeration Plant.

### 20-Ton Cableway

The 20-ton cableway has a 1700-foot span with a stationary head tower and a traveling tail tower. The hoist was made by the Washington Iron Works and is powered by a 500-horsepower Westinghouse motor. The main cable is 3 inches in diameter, the load line is ¾-inch and the endless line is 1-inch.

Concrete buckets, manufactured by Garland Brothers, are pneumatically operated and are eight cubic yard capacity. The quantity and rate of discharge can be easily controlled. Smaller buckets of 4-, 2- and 1-cubic-yard capacity are used at times.

### River Diversion in Three Stages

While not large, the flow of the Smith River fluctuates widely. Mean annual flow is 275 cfs with a minimum recorded flow of 40 cfs and a maximum of over 30,000 cfs. Floods are the flash type and reach their peak at times within a matter of hours.

River diversion was conducted in three stages. The first stage cofferdam diverted the river to the right abutment and permitted construction of the left non-over-flow section of the dam, the spillway blocks in which the sluiceways were installed and about two-thirds of the apron section.

The second stage cofferdam blocked off the remaining or right portion of the river channel and diverted the river through the sluiceways constructed in the first stage. The third stage of diversion utilizes a 60-inch pipe connected to one of the sluiceways to carry approximately 400 sec. ft. of the river flow while the remaining portion of the apron and training wall downstream from the dam are being constructed.

The contractor elected to use the Ohio River box type cofferdam which proved both economical and satisfactory. Stage one and stage two cofferdams were each permitted to flood from downstream dur-

(Continued on page 38)



Above—Placing concrete on Philpott dam with eight cubic yard bucket operating on cableway. The blocks in the background are partially covered for cold weather protection.

## PHILPOTT PROJECT—PERTINENT DATA

### Dam

Type .....	concrete gravity
Length .....	892 ft.
Maximum height of dam .....	220 ft.
Maximum width at base .....	174 ft.
Length of spillway .....	120 ft.
Length of stilling basin .....	187 ft.
Elevation above mean sea level:	
Top of dam .....	1016 ft.
Crest of spillway .....	985 ft.
Base of spillway section (approximate) .....	800 ft.
Normal tailwater (water surface downstream from powerhouse) .....	807 to 810 ft.
Tailwater during flood .....	810 to 836 ft.
Controls works in spillway section:	
Type .....	rectangular conduits through base of spillway section
Number of conduits .....	3
Size of conduits, width by height .....	5 ft. 8 in. by 10 ft.
Discharge capacity, reservoir at spillway crest .....	13,500 c.f.s.

### Reservoir

Feature	Elevation, feet above mean sea level	Reservoir area, acres	Reservoir, capacity acre-feet
Top of dam .....	1,016	.....	.....
Top of flood control space .....	998	4,060	249,800
Top of power pool .....	974	2,880	167,400
Bottom of power pool .....	920	1,350	56,300
Flood control storage .....	974 to 998	.....	82,400
Power storage .....	920 to 974	.....	111,100

### Power Development

Power penstocks:	
Two penstocks, diameter of each .....	9 ft.
One penstock, diameter .....	3 ft.
Power units:	
Type of turbine .....	Francis-vertical shaft
Number of turbines initially installed .....	3
Capacity of turbines initially installed:	
Two turbines, capacity of each at 152 ft. net head .....	9,400 hp.
One turbine, capacity at 152 ft. net head .....	860 hp.
Capacity of generators, initially installed:	
Two generators, normal rating of each .....	6,700 kw.
One generator, normal rating .....	600 kw.
Power:	
Dependable capacity .....	8,600 kw.
Average annual output .....	24,500,000 kw.-hr.

Below—Preparing horizontal construction joint for more concrete.





Above—Left—Vibrating six-inch aggregate concrete with internal type vibrators. Middle—Applying vacuum process to tops of apron blocks. Right—Drilling and grouting in operation gallery.

## Philpott Dam Nears Finish on Smith River

(Continued from page 37)

ing floods when the river was within a few inches of the top and still rising. However, neither cofferdam was topped. The area inclosed in the cofferdams was small and the equipment was easily removed so that no damage and very little lost time resulted in either case.

### Foundations in Rock

The foundation rock is a quartz mica schist. While there are some joints, seams and shears they are tight and do not provide channelways capable of carrying large quantities of seepage.

A grout curtain is being formed in the rock foundation for a depth of about 75 feet. The holes are on 5-foot centers and are being drilled and grouted in three 25-foot stages. A small amount of consolidation grouting is being performed in localized areas. After completion of the grouting program three-inch drain holes on 10-foot centers will be drilled into the foundation rock a few feet downstream from the grout curtain. Both the grout and the drain holes are drilled through pipes embedded in the concrete from the lower gallery to the rock foundation.

Prior to the placing of concrete in the spillway apron area, vertical drain holes are drilled into the rock foundation for a depth of 15 feet and connected to a system of horizontal box drains to prevent damage to the apron from excessive uplift pressures.

### Concrete and Aggregate

Fine and coarse aggregate for concrete are manufactured from a granite gneiss. Specific gravity averages 2.86 and absorption is less than  $\frac{1}{2}$  per cent. Coarse aggregate is furnished in four sizes as follows:  $\frac{1}{4}$ - to  $\frac{1}{2}$ -inch;  $\frac{3}{8}$ - to 1 $\frac{1}{2}$ -inch;

1 $\frac{1}{2}$ - to 3 inches and 3- to 6 inches. The fine aggregate grading specifications are given in the accompanying table.

Very little difficulty is experienced in obtaining coarse aggregate to meet specifications. The fine aggregate, however, normally contains an excess of material retained on the No. 16 sieve and passing the No. 100 sieve, and a shortage of the material between the No. 16 and the No. 50 sieves. It is necessary to reduce the plus No. 16 sieve material by screening and recirculating and remove the excess minus No. 100 sieve material by the air classifier in order to obtain the desired material between the No. 16 and No. 50 sieves.

The cement is a blend of 25 per cent of natural and 75 per cent of portland type II. The natural cement has an air entraining agent (neutralized Vinsol Resin) interground so as to produce from 3- to 6 per cent entrained air in the minus 1 $\frac{1}{2}$ -inch portion of the concrete.

### Concrete in Two Classes

The concrete is divided into two main classes—(1) Interior (or unexposed) and (2) Exterior (or exposed). The various mixes are further sub-divided to the maximum size of coarse aggregate used in the concrete. The interior mixes have W/C ratios of from 0.65 to 0.75 by weight and the exterior mixes have ratios of from 0.45 to 0.50 by weight. The cement contents are determined by the placing conditions, workability requirements and the W/C ratios given above.

Table 1 gives the concrete mixes being used at Philpott at the present time. Seventy per cent of the concrete placed in the dam to date is composed of the 6-inch interior mix. This mix has a 6-inch maximum size aggregate, 2 $\frac{1}{2}$  bags of cement

per cubic yard and a slump of about  $\frac{3}{4}$ -inch with a W/C ratio of 0.73. The 6-inch exterior mix, which is used on the exposed faces for a thickness of 5 to 8 feet, has a cement content of 4.00 bags per cubic yard with a W/C ratio of 0.50.

Percentages of the various mixes used in the dam to date are as follows:

Type of Mix—% of Total Concrete	
6" Interior	70.08%
6" Exterior	21.20
3" Interior	2.30
3" Exterior	5.00
3" Vacuum	0.27
1 $\frac{1}{2}$ " Exterior	0.37
$\frac{3}{4}$ " Exterior	0.05
$\frac{1}{4}$ " Grout	0.73
Total	100.00%

The average cement content for all concrete placed in the dam to date is 3.06 bags per cubic yard.

All of the ingredients used in the concrete are batched by weight. As many as twelve different mixes can be set up at one time and any one of these can be automatically batched by setting the mix selector indicator to the mix desired. The weight of each ingredient is printed on a roll for checking in case of disputes and for keeping as a record.

### Laboratory Tests Made

A small laboratory is maintained in the mixing plant. An inspector takes samples of aggregates, makes moisture tests, checks and adjusts scale settings and maintains the W/C ratio within the specified limits. Samples of concrete are taken at intervals to determine slump, air content and temperature and about once each shift a set of 6 by 12-inch cylinders is made for compressive tests.

The placing temperature of the concrete in hot weather is held to between 40° and 62° F by three separate procedures. The mixing water is cooled to approximately 35° F, Flake Ice at between 25° to 30° F, is substituted for a part of the mixing water and the aggregate in the storage bins at the top of the mixing plant is cooled by the circulation of air at about 50° F. The purpose of lowering the placing temperature is to reduce the

### FINE AGGREGATE GRADATION SPECIFICATIONS

Sieve Size		Specifications Limits—% by Weight.	
Passing	Retained On	Minimum	Maximum
.....	No. 4	0	5
No. 4	No. 8	5	15
No. 8	No. 16	10	20
No. 16	No. 30	20	30
No. 30	No. 50	20	30
No. 50	No. 100	12	22
No. 100	No. 200	3	7
No. 200	Pan	1	5

Finesness Modulus 2.30 to 2.80

maximum temperature and thereby lessens the drop when the concrete cools to its final temperature. Decreasing the difference between the maximum and final temperature reduces the tendency of the concrete to crack.

In cold weather heated air is circulated through the aggregate storage bins through the same system that carries the cooled air in hot weather.

#### Eight-Yard Buckets Used

Concrete is transported from a loading dock near the mixing plant to the forms in eight-cubic-yard buckets attached to a 20-ton cableway. The buckets are discharged in two piles of approximately four cubic yards each and vibrated into place by internal type electric or pneumatic vibrators.

The concrete is normally placed in five-foot lifts with a five-day interval between lifts. The five-foot lifts are placed in four layers of about 15 inches in order to get thorough vibration. Vacuum processing is used on the unformed surfaces of the spillway and the tops of the apron blocks to improve density and durability.

The normal rate of placing is about 100 cubic yards an hour. However, rates of 150 to 160 cubic yards an hour have been maintained for short periods.

Horizontal construction joints are prepared for additional concrete by the green-cut method. The surface of the lift is cut with a water and air jet using about 100 psi and then thoroughly washed until the wash water is clear. If the cutting is done at the proper time very little material is removed and the resulting surface is clean and rough and provides an excellent bond for new concrete. A layer of sand-cement mortar is deposited on and brushed over the old surface immediately before placing additional concrete.

Exposed concrete and horizontal construction joints are cured with water for at least 14 days. Membrane curing compound is used on bulk head faces and other non-exposed concrete.

In cold weather the blocks are covered with canvas and temperatures of 50° to 70° F maintained for at least five days with oil burning, blower type heaters.

#### Cantilever Forms

Face and bulkhead forms are the cantilever type. Sections are made up in lengths of 10, 6, 5 and 4 feet. The frames and cantilever arms are steel and the facing is 2-inch tongue and groove lumber. Faces are oiled previous to each pour and are sanded at intervals as required.

#### Personnel Listed

For the contractors, S. E. Winks is project manager; W. C. L. Jones is chief engineer, and John Ransdell is superintendent.

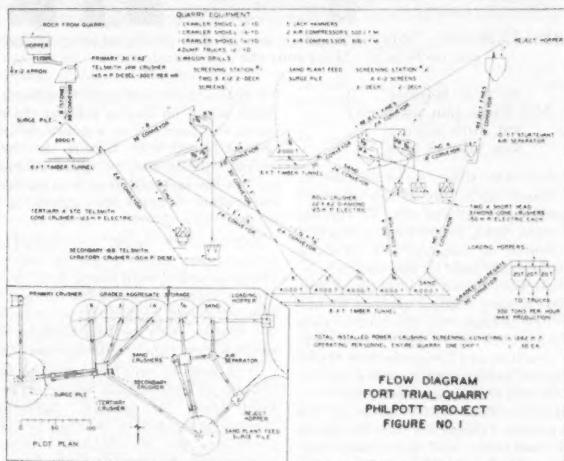
The project is being constructed under the supervision of the Norfolk District of the Corps of Engineers. Col. William F. Powers is district engineer and Eugene K. Jackson is chief of the construction division. William D. Nowlin is resident engineer and Leo Q. Frank is assistant resident engineer.

TABLE I

#### PHILPOTT DAM PROJECT

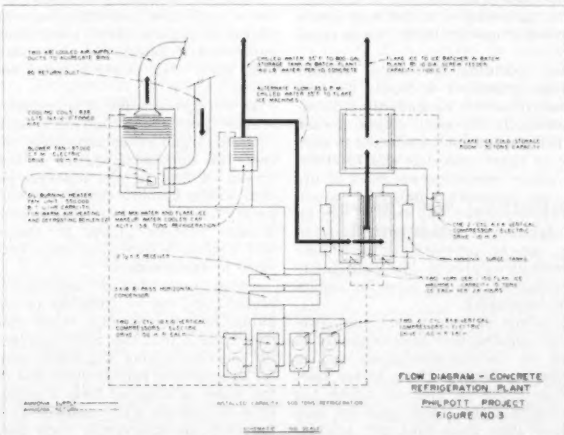
Concrete Mixes in use as of 1 March 1951

Mix Designation	6I-21	6E-6	3I-1	3E-6	3V-7	15I-1	15E-2	75E-2
W/C Ratio by weight .....	0.73	0.50	0.65	0.50	0.45	0.65	0.50	0.50
Water (Lbs. per cu. yd.) ...	172	188	214	212	212	275	259	329
Bags Cement/C.Y. ....	2.50	4.00	3.50	4.50	5.00	4.50	5.50	7.00
Yield cu. yds./batch .....	4.00	4.00	4.00	4.00	4.00	4.00	4.00	2.00
Cobble (3"-6") .....	4.437	4.239	.....	.....	.....	.....	.....	.....
Coarse (1 1/2"-3") .....	3.170	3.027	4.450	4.496	2.151	.....	.....	.....
Medium (3/4"-1 1/2") .....	2.377	2.271	3.115	3.045	3.872	4.716	4.740	.....
Fine (No. 4-3/4") .....	2.536	2.422	3.412	3.335	4.302	4.800	4.800	3.278
Total Coarse Aggregate .....	12.520	11.959	10.977	10.876	10.325	9.516	9.540	3.278
Sand (Minus No. 4) .....	3.328	3.179	3.857	3.626	4.015	4.078	3.897	2.682
Total Aggregate .....	15.848	15.138	14.834	14.502	14.340	13.594	13.437	5.960
Cement (Portland) .....	724	1,158	1,013	1,303	1,448	1,303	1,592	1,013
Cement (Natural) .....	216	346	303	389	432	389	476	303
Water (Lbs. per batch) ...	686	752	855	846	846	1,100	1,034	658
Batch weight .....	17.474	17.394	17.005	17.040	17.066	16.386	16.539	7.934
Unit Wt. (Lbs./cu. ft.) .....	161.80	161.06	157.45	157.78	158.02	151.72	153.14	146.93



Above—Aggregate for construction of Philpott Dam was furnished by Lambert Brothers, Inc., from the Fort Trial Quarry located about nine miles from the dam site. A flow diagram is shown above.

Below—Flow diagram of the refrigeration plant, which furnishes chilled water and flake ice for the mixers and cooled air to circulate through the aggregate storage bins in the mixing plant.



## Construction Fire Safety Begins on the Job



Above—Workers being trained in use of fire extinguishers, which can be located throughout the construction site.

by P. C. Hensler  
Fire Protection Institute  
670 Fifth Avenue  
New York 19, N. Y.

In times like these America can no longer afford the luxury of fire waste on the home front. At the rate of current losses, more than 10,000 lives and \$700,000,000 worth of property will be sacrificed to fire this year in our nation.

Construction blazes are costly at any time, but during critical periods of materials and equipment shortages, they present an even more serious problem. Fire prevention and fire protection, therefore, should hold added meaning on current and future construction jobs.

Destructive fires occur often on the building site. Temporary job buildings, put up hurriedly, and sometimes haphazardly, to house blue prints, time sheets and other records often house too, such hazards as improper wiring and defective heating apparatus which can spark disastrous blazes.

All accumulations of rubbish, brush and trees on the building site can be piled in orderly bundles. Contractors can start themselves on the road of safe construction by seeing to it that such debris is disposed of quickly before it can cause trouble.

Normal building operations necessitate large quantities of highly combustible materials such as scaffolding, forms and canvas. In the early stages of each job, a fire warden can be selected to keep an eye on these materials and to otherwise enforce common-sense rules of fire safety. An adequate number of watchmen, fully equipped and trained can also be appointed. Added protection, of course, can be provided by stationing Underwriters'-approved fire extinguishers throughout the job area for use in time of emergency.

Fire safety experts assert that two-thirds of construction fires originate in welding or cutting operations and in salamanders. Most of these blazes start from hot drops of slag or white hot metal which retain their heat for long periods of time. Such fires may smolder

for hours unnoticed and often burst into flame when no one is present. In many cases the flame of a welding torch has ignited flammable liquids or rubbish nearby on the site, so "good housekeeping" in the welding area is of paramount importance where fire safety is concerned.

Salamanders used on construction projects are often made of old metal drums punched with holes. Because there are so many combustibles around, they present a real hazard. It is advisable to use coal or coke for fuel because of the spark hazard inherent in the use of wood.

It is wise to prohibit smoking in the vicinity of combustible materials and to keep them in constant surveillance. Workers engaged in welding or cutting operations can be adequately protected by wearing woolen clothing, hats, high safety shoes and goggles. Clothing must be kept in good condition at all times to prevent hot particles of metal from burning the worker. These simple precautions may save the worker many hours of lost time and money resulting from on-the-job accidents.

Losses are also likely to occur from the use of untreated scaffolding or ordinary canvas tarpaulins. Metal scaffolding and flameproofed canvas are available; in fact, many city building codes require them.

As work progresses, it is important to provide permanent stairways, stairway enclosures and other structures to prevent the horizontal spread or vertical spread of fire. In like manner, permanent wiring systems should replace temporary ones as soon as feasible and permanent heating plants or temporary unit heating systems can often take the place of salamanders.

Added precautions are necessary where projects are remote from the services of public fire departments. Some contractors assume that the water supply used for concrete mixing will prove adequate for fire-fighting emergencies. But unless the water is supplied from a permanent main or hydrant with adequate pressure for such an emergency, such facilities

will not guarantee control of a serious fire.

Fire safety experts concur in the fact that the first five minutes spent in fighting a fire can be the most important in determining the outcome. It is important, therefore, that employees are thoroughly familiar with the proper use and care of available fire-fighting equipment on the premises. Minutes spent in reading manufacturer's instructions on an extinguisher in time of emergency can often mean the difference between a fire kept under control and complete destruction.

More and more contractors are recognizing the worth of employee brigades, trained in sound fire prevention habits, familiar with approved fire fighting equipment and capable of minimizing panic in the event of fire by specific responsibilities.

Despite the proved value of these brigades, number one rule in case of fire is to call the fire department.

At least ninety per cent of all fires can be prevented with adequate fire protection and sound fire prevention habits. Fire can strike you anywhere—any time. With all the construction going on in the United States now, it is important that fire safety begin on the job. You can save dollars, manpower and time on your jobs by being prepared for fire!

## \$16,000,000 Road Work Started by Texas

The Texas State Highway Commission has started the engineering staff of the Texas Highway Department on a vast program of betterment of the existing highway system at a total cost of \$16,000,000.

State Highway Engineer D. C. Greer states that the program of work would cover 434 individual projects throughout the state and is designed to preserve the investment that Texas has in its existing highways and farm to market roads.

Approximately 3,400 miles of highways and farm to market roads will receive seal coats, additional surfacing, or be widened and reconditioned.

Mr. Greer said that the heavy traffic volume now traversing the roads of Texas makes it necessary that heavy betterments be accomplished on the surfaces of the roads of this state as quickly as possible in order to preserve the investment of existing roads. He stated that this large expenditure "for this type of protection will undoubtedly curtail the heavy type of new construction but should prove to be most advantageous to moving traffic during the next two or three years."

## Texas Projects Approved

The Texas State Highway Commission has approved two projects on U.S. Highway 180 in and near Breckenridge and a relocation of State Highway 6 within that city at an estimated cost of \$140,000.

Within the city of Breckenridge one project calls for widening the pavement on U.S. 180 from Gonzales Creek to the east city limits and relocation of State Highway 6 from Walker Street south to near the south city limit.



## Kentucky Highway Bids Set at \$1,784,000

Proposals totaling more than \$1,784,000 were received September 28 by the Kentucky Department of Highways. Listed by counties, the projects include the following:

Bell-Clay—3.11 miles grade, drain and traffic bound limestone, Manchester-Pineville Road, Harry J. Meyers, Jr., Covington, \$118,914;

Christian-Hopkins—23.263 miles widening, stabilization with portland cement and bituminous surface, and Hopkinsville-Dawson Springs Road, R. B. Tyler Co., Louisville, \$357,887;

Harrison-Bourbon—2.812 miles grade, drain and traffic bound limestone, Cynthia Lexington Road, Fuller-Davies Co., Covington, \$120,178;

Lewis-Fleming—2.147 miles grade, drain and traffic bound limestone, Vanceburg-Kinnicknick-Mt. Carmel Road, Licking River Limestone Co., West Liberty, \$75,273;

Franklin—.047 miles of street widening and bituminous surface, State Office Building parking lot, Fuller-Davies Co., Covington, \$15,185;

Hardin—.416 of a mile of grade, drain and traffic bound limestone, U. S. 31-West Shepherdville Road, Fount Crow, Ltd., Beaver Dam, \$12,764;

Harlan—.047 of a mile of railroad, tunnel, culvert and bituminous penetration approaches, Codell Construction Co., Winchester, \$77,919;

Jefferson—1.612 miles bituminous surface and miscellaneous construction, Breslin Construction Co., Louisville, \$44,120;

Owen—12.767 miles bituminous penetration macadam surface, Worthville-Balls Landing-Gratz Road, Franklin Construction Co., Frankfort, \$134,653;

Pendleton and Boone—14.061 miles bituminous surface, Eaton Oil Works, Covington, \$12,333;

Bracken—4.1 miles reconstruction and traffic bound limestone, Sam Nally Co., Bardstown, \$58,975;

Breathitt—1.773 miles reconstruction and traffic bound limestone, Leatherwood Road, Wood & Barton Co., Frankfort, \$37,849;

Breathitt—1.706 miles reconstruction and traffic bound limestone, Frozen Creek Road, Winston Ford Co., Prestonsburg, \$30,862;

Calloway—4.201 miles reconstruction and local bank or creek gravel, McDade & McDade, Fulton, \$57,733;

Carters—2.026 miles reconstruction and traffic bound limestone, Brushy Creek Road, Wells & White, Inc., Morehead, \$23,527;

Casey—4.974 miles reconstruction and local bank or creek gravel, Clementsville-Possum Trot Road, G. & R. Coal Co., Robbins, Tenn., \$81,023;

Greenup—5.988 miles reconstruction and traffic bound river gravel, Schultz Creek Road, Wells & White, Inc., Morehead, \$90,320;

Marshall—6.868 miles reconstruction and traffic bound limestone, Ford-Holman Construction Co., Bardwell, \$54,435;

Metcalfe—2.709 miles reconstruction and local bank or creek gravel, East Fork-Mell Road, G. & R. Coal Co., Robbins, Tenn., \$46,234;

Monroe—2.942 miles reconstruction and traffic bound limestone, Meredith Creek Road, R. R. Dawson Bridge Co., and Spickard & McClure, Bloomfield, \$64,771;

Pike—Reconstruction and traffic bound slag, Ratcliff Creek Road, Burchett Trucking Co., Prestonsburg, \$69,388; Racoon Creek Road, Burchett Company, \$70,392; Marrobone-Hellier Road, Winston Ford Co., Prestonsburg, \$68,632;

Pulaski—3.992 miles reconstruction and traffic bound limestone, Mintonville-Cain's Store Road, Spickard & McClure Construction Co., Jamestown, \$39,579.

merit to warrant the top prize. They included work of the following architects: Anshen and Allen, San Francisco; Alexander S. Cochran, Baltimore; Cocke, Bowman and York, San Antonio; Maynard Lyndon, Los Angeles; Richard J. Neutra, Los Angeles; Sherlock, Smith and Adams, Montgomery, Alabama; Raphael S. Soriano, Los Angeles; and Wurster, Bernardi and Emmons, San Francisco.

Top honors in the hospital class were given the Clearwater County Memorial Hospital, Bagley, Minn., designed by the Minneapolis firm, Thorshov and Cerny. The jury commended the way in which it separated the patients from the service activities in the building, and gave each major kind of traffic within the hospital a direct route of its own.

Among other new hospitals given merit awards were the Northern Indiana Hospital for Crippled Children, South Bend, Ind., Pohlmeier and Pohlmeier, architects; Georgia Baptist Hospital, Atlanta, Ga., Stevens and Wilkinson, architects; and Ferry County Hospital, Marion, Ohio, Sherlock, Smith and Adams, Montgomery, Ala.; Goodyear Memorial Pavilion (Ma-

ternity), Ventura, Calif., George B. Allison, and Ulysses and Floyd Ribbe, Los Angeles, Calif., architects; Xavier Hospital, Dubuque, Iowa, Schmidt, Garden and Erickson, Chicago, architects; St. Francis Cabrini Hospital, Alexandria, La., Golemon and Rolfe, Houston, Texas, architects; U. S. Veterans Hospital, Wilkes-Barre, Pa., Kelly and Gruen, architects; U. S. Veterans Hospital, Fort Wayne, Ind., Giffels and Vallet, Inc., Detroit, Mich., architects.

## Dallas Container Plant Under Construction

A new, modern \$600,000 container plant is under construction in Dallas as a result of the accelerating manufacturing activity necessitating additional packaging production in which to ship the ever growing number of products being made in the Southwest.

National Container Corp., one of the largest firms in the corrugated container industry, completely integrates its operation "From the Tree to the Finished Product," and will use the new Dallas plant to serve manufacturers of the Southwest who in 1950 consumed a large portion of the company's 3,285,000,000 square feet of production. The parent company operates eleven plants, located in eight states, fabricating all major types of corrugated paper and solid fibre board containers utilized not only by manufacturers for shipment of their products, but also by defense industries who use the boxes for both overseas and domestic shipments.

The Dallas plant, according to President Samuel Kipnis, will be the most modern in the company's entire operation. Into its anticipated 100,000 square feet of working space will go the most modern box-making equipment being manufactured today. The entire operation will be streamlined for production to meet the sharply growing needs of the booming industrial and manufacturing activity of the Southwest, which Mr. Kipnis described as "the bright spot on the nation's industrial horizon."

The new plant, designed by Leinbach Brothers, architects, is being constructed by C. E. Fritch, general contractor, both of Dallas. It is located on property embracing seven acres along a siding of the Gulf, Colorado & Santa Fe Railroad in what is called the Santa Fe industrial area. National Container's installation will be the first building in the newly opened section.

## Sewer Pipe Consultant Named to N. P. A.

Eugene C. Clemens, ceramic engineer for the Cannelton Sewer Pipe Co., has been named vitrified clay sewer pipe industry's consultant with the National Production Authority, it is announced by D. M. Strickland, president of National Clay Pipe Association.

Mr. Clemens is treasurer of the Cannelton Sewer Pipe Co., Cannelton, Ind., and vice president of the Texas Vitrified Pipe Co., Mineral Wells, Tex.

## Texas Bottling Plant Honored by Architects

A soft drink bottling plant in Texas, a small town hospital in Minnesota, and a group of homes were picked recently as the outstanding buildings of the year in architecture.

The annual honors awards of the American Institute of Architects this year were chosen from among industrial, hospital and residential buildings. The building types in the competition change from year to year.

In the industrial field first honors were given to a Coca-Cola bottling plant in Houston, designed by the Texas architectural firm, Stone and Pitts. The building was cited because its design aided efficient production and its appearance combined good merchandising with strong community relations. An electronics plant in San Carlos, Calif., designed by Francis Joseph McCarthy, San Francisco, received an award of merit in the industrial division.

Eight houses were designated for special merit awards by a jury which found itself unable to agree on one of sufficient

# Equipment... Manufacturers News

## Koehring Hoe Attachment Extends Digging Depth



New hoe attachment for the Koehring 304 Excavator.

A newly designed hoe attachment for the Koehring 304 excavator will increase the machine's digging depth to 19 feet, 9 inches, according to a recent announcement by the manufacturer. Other improvements made on the Model 304 provide extra resistance to side sway and extra strength to meet any operating condition for below ground level excavating.

Officially rated as a  $\frac{3}{4}$  yard excavator, the 304's sturdy dipper arm is pivoted at the end of the boom and jackknifes to dig a vertical backwall. This reduces hand cleanup time to a minimum in basement digging.

Position of the counter shaft in line with boom foot mounting on the 304 provides another important advantage. It eliminates dipper drift when the boom is raised. Use of double digging lines to the sturdy dipper eliminates reverse cable bends and results in important savings due to longer cable life.

A versatile dipper arrangement provides top production capacity for the Koehring Hoe under any working conditions. Adjusting links on the dipper arm allow for three variable settings so that the dipper angle can be matched to the type of material and cut being made. There are no moving cables or sheaves on the dipper to clog the material and add to cable wear and breakage. Because the digging line is coupled close to the dipper through an equalizer, the dipper can be pulled up tight to the boom for increased production efficiency. Side cut-

ters can be used to full advantage to widen a trench or dress an excavation.

Additional information and complete specifications on the Koehring  $\frac{3}{4}$ -yard Hoe can be obtained by writing to the Koehring Company, Milwaukee 16, Wis., or by contracting any Koehring distributors.

## Hyster Winch Made for Caterpillar D4 Tractor

Designed to supply increasing demand for a lightweight, free-spooling tractor winch with fast line speeds and quick positive brake action a completely new D4 HySpeed winch has been developed by the Hyster Company and is available for immediate delivery from Hyster-Caterpillar dealers.

Another "first" in tractor equipment design by Hyster, the new winch can be mounted on either seat or fender tank type "Caterpillar" D4 Tractors.

The new winch has many applications as a production tool, as well as for service, maintenance and general utility. A few of the jobs it will perform are lifting, pulling, crane work, light pile driving, ground skidding logs, bundling pulp logs, skidding bundled pulpwood and for "feeder cat" work in logging.

Both a pulpwood brochure and specification sheet for the new D4 HySpeed winch are available from the Hyster Company, 2902 N. E. Clackamas Street, Portland 8, Ore.

## Power Head Named By Allis-Chalmers

Combining of the electrical and mechanical power departments of Allis-Chalmers Manufacturing Co. into a power department under the management of R. M. Casper has been announced by J. L. Singleton, vice president of the company's general machinery division.

Mr. Casper had been manager of Allis-Chalmers electrical department since 1949. He joined the company in 1936 as a sales representative in the Detroit office. In 1942 he was named sales engineer in charge of motor and generator sales in Allis-Chalmers electrical department, and in 1947 he became manager of the motor and generator section.

New power department appointments include: F. W. Bush, assistant manager in charge of the electrical sections; C. C. Jordan, assistant manager in charge of the mechanical sections; R. N. Miers, manager of the steam turbine section; C. R. Braun, assistant to R. M. Casper, and E. J. Schiebeneis, office manager of the power department.

## 101 Utility Spray Tank Made by Littleford

(Illustrated at left)

Littleford Bros., Inc., announces the new and improved design of the four-wheeled trailer type Model 101 Utility Spray Tank for road construction and maintenance work.

This highly portable utility unit is now constructed with a self-supporting tank, the elimination of a heavy frame. The new design is simple and it eliminates the dual tires both front and rear.

The four-wheeled frameless trailer 101 is made in 800 and 1000 gallon capacity and is the most modern road maintenance unit of its kind. It has a Spray Bar for small application jobs, Hand Spray Attachment for general patch work, and a Pouring Pot Outlet for crack filling and patch work on highways, streets, runways and parking areas.



Model 101 Utility Spray Tank Announced by Littleford.

## LeTourneau Official Named Road Group Director

Roy E. McCluskey, vice president and general sales manager of the R. G. LeTourneau, Inc., has been elected to the board of directors of the International Road Federation.

This Federation which has been officially designated by the Economic Cooperation Administration (ECA) as spokesman for the highway industry and associated manufacturers in connection with the foreign programs of the ECA, consists of four controlling bodies: The construction equipment industry, the rubber industry, and automobile industry, and the petroleum industry.

Other honors which have recently come to Mr. McCluskey include his being named secretary-treasurer of the Board of Directors of the Construction Industry Manufacturers Association (CIMA), which is in constant consultation with the government on utilization of construction equipment in civilian and military use; and his being named a member of the International Committee and the Budget and Finance Committee of CIMA.

"Selection of a LeTourneau official for these important posts points up the growing importance of this Peoria industry in the construction equipment field, in the field of business enterprise, and more broadly, the role that our country is playing in the rehabilitation of the entire world," the company announcement states.

## Runways Kept Snow Free At Bucyrus-Erie Plant

Concrete crane and transport runways are being kept clear of snow by means of a novel application of heating cable at the South Milwaukee plant of the Bucyrus-Erie Co.

The company lined the runways with General Electric flexible lead-covered heating cable just before the worst part of the winter last year. The installation, comprising 40,000 feet of heating cable, covers four concrete runways ranging from 100 to 275 feet in length and about ten feet wide.

Step-down transformers, to supply correct voltage for the non-standard lengths of heating cable, were built especially for this installation by General Electric's service shop. This required secondary voltage is about 180 volts for the shortest runway and about 500 volts for the longest.

The heating cable is laid on wire mats about 2 1/2 to 3 inches below the surface and on approximately 3-inch centers. Tile drains installed along the edges of the runways provide adequate drainage for the melted snow.

## Allis-Chalmers Releases New Pump Bulletin

Construction features of Allis-Chalmers oil-lubricated bearing, pedestal-mounted pump for handling chemicals, liquors, corrosive materials and solutions, hot liquids, and petroleum are described in a new six-page bulletin released by the company.

Six alternate sealing arrangements are shown and dimensions and specifications of the pump, available in capacities to 1200 gallons per minute at heads to 250 feet and temperatures to 500° F., are given.

Two sizes of pedestal assembly cover the entire range of pump sizes. Shafts, sleeves, bearings and miscellaneous hardware are interchangeable.

Copies of "Oil Lubricated Pedestal Mounted Pump," 52B7638, are available upon request from Allis-Chalmers Manufacturing Co., 1083 S. 70th Street, Milwaukee, Wisc.

## Fisher Named Operating Manager of Koppers Freyn Department

A. B. Fisher, Jr., chief engineer for the Engineering and Construction division of Koppers Company, Inc., since 1949, has been named operating manager of Koppers Freyn Engineering Department offices in Chicago, it was announced here today.

In making the announcement, Joseph Becker, vice president and general manager of the Engineering and Construction division, said that Mr. Fisher has moved to Chicago to take over his new duties. He succeeds Gordon Fox, vice president and operating manager of the Freyn Department, who is retiring from this position January 2, 1952, but will continue in a consulting capacity.

Mr. Becker also announced appointment of R. J. Sprott to succeed Mr. Fisher as chief engineer; C. S. Carden to succeed Mr. Sprott as assistant chief engineer; and A. D. Orefice to succeed Mr. Carden as manager of the Division's by-product section.

## Freight Line Using Diesels Since 1939

A trucking company in the Southwest that has used GMC diesel trucks since 1939 reports that each of its original eight models traveled approximately 1,000,000 miles, it was disclosed today in the second of a series of case histories on trucks by the GMC Truck & Coach Division.

Chief Freight Lines, which operates between Kansas City, Tulsa, Oklahoma City, Dallas and Fort Worth, became a pioneer diesel truck operator in 1939 when it bought eight GMC Model ADF 501 units. With fuel cost then being 4½ cents per gallon, and the new GMCs averaging 7½ miles per gallon the savings realized "more than paid for the cost of the equipment in very short order," according to the case history.

"The first eight Diesel engine models, after operating approximately a million miles per unit, were replaced with 10 new GMC ADF 753 models in 1948," reported L. M. Bierbrodt, Fleet Superintendent of Chief, who added that the use of tandem trailers and increased payloads had eventually required the larger Diesels."

## Galion Iron Acquires Plant in Bucyrus, Ohio

To supply the demand for Galion motor graders and rollers, the Galion Iron Works & Manufacturing Co., Galion, Ohio, has purchased a large modern factory at Bucyrus, Ohio, twelve miles west of Galion where the main offices and factory are located. The two factories cover an area of over thirty acres. Floor space of the many buildings is over 325,000 square feet. This is the second expansion announced by Galion this year. The company is just completing the building of a new plant in Wakefield, Yorks, England, to handle a portion of its increased export business which covers practically every country in the world.

Galion Iron Works & Manufacturing Co. was founded in 1907. The first building consisted of a foundry in which sectional cast iron pipe was manufactured. A complete line consisting of eight sizes of horse-drawn graders was manufactured within the next few years. The first Galion gasoline-powered three-wheel road roller came off the assembly line in 1918, and the first motor grader in 1925. Galion also introduced its new leaning wheel (pull type) tractor grader in 1925.

Advanced design, sound engineering and high quality construction in Galion products have resulted in constant and rapid growth, making the Galion Iron Works & Manufacturing Co. one of the world's leading manufacturers of motor graders and rollers.

## Harvester Tests Trucks at Phoenix Proving Ground



Aerial view of Phoenix proving ground, showing truck test tracks and network of access roads where International trucks are tested the year round. At left is the new seven and one-quarter mile paved test track.

The motor truck division of International Harvester Co., announced that full-scale testing of International trucks has begun at the company's colorful Phoenix, Ariz. proving ground, following completion of an extensive road construction program.

The proving ground, comprising six and a half square miles of rugged desert land on the southern shelf of the Salt River Mountains, features a new 28-foot, seven-and-a-quarter-mile paved test track for trucks, believed to be the biggest paved road of its kind.

Roads and test areas used for motor truck were constructed by International Harvester's industrial power division as a part of the division's test program for International crawler tractors and construction equipment which was initiated at the proving ground in 1947.

The testing area, nine map miles—or 22 by road—south of Phoenix assures International of year-around testing weather. Temperatures at the proving ground cover a 100-degree range, with 118 degrees as the recorded high. Ground temperatures up to 165 degrees have been recorded.

### Special Test Courses

Besides the big paved test track, the proving ground contains a rough four-mile dirt test track, 11 miles of access roads, and a number of special test areas. These include a course for the racking "figure 8" test and a series of steep grades, ranging from 20 to 60 per cent, for testing off-highway trucks.

An air cleaner test has been established in an area whose sand and dust are reputedly "the most abrasive in the U. S." There is also a 5,900 foot strip of "dead flat" 40-foot paving on the test loop for cooling, braking, and acceleration tests. A combined water and mud bath for seal tests is projected.

Testing program shops and headquarters are maintained on the proving ground. The motor truck division main-

tains a testing staff of approximately 50—including engineers, test drivers, service men, and clerks—to keep the test results flowing.

### Big Test Fleet

The International truck test fleet, made up of representative models from the world's most complete line of trucks, numbers generally between 25 and 30, although the count varies constantly according to the requirements from the company's engineering headquarters at Fort Wayne, Ind.

Trucks of the proving ground fleet are employed in both production quality and experimental testing. One group of trucks, drawn at random from production lines, engage in endurance tests, keeping a continuous check on production quality. Engineering test programs are many and varied, and include testing of competitive makes. All tests are conducted with trucks loading to capacity.

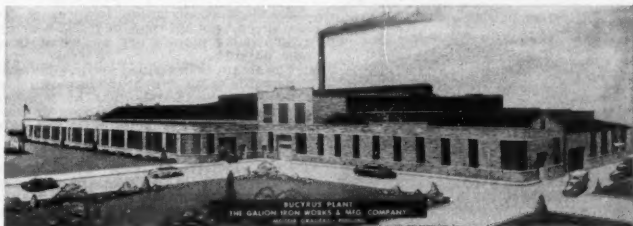
Minimum elevation of the proving ground is 1,200 feet. Its highest point is 2,000 feet. The terrain is rough, and includes a number of high, rocky hills. High altitude and cold weather tests are run off in the 10,000-foot mountain ranges a few hours' drive to the north.

### Millions of Test Miles

Since the paved test track opened for initial operation, the fleet has been averaging 34,000 miles a week. In all, since International began its truck testing in Arizona in February, 1948, more than 5,000,000 test miles have been driven. Test runs took place on Arizona highways before the proving ground's paved track was completed.

International's truck-testing program now totals more than three million miles annually. The proving ground's paved test track loops irregularly in a five-square-mile area. It, along with the rest of the proving ground, is fenced and closed to the public. The truck test fleet rolls around this course in clockwise fashion, 24 hours a day.

Bucyrus plant recently added to facilities of Galion Iron Works & Manufacturing Co., one of the world's leading motor grader and roller manufacturers.





# Equipment . . .

## Koppers To Engineer Chemical Plant

Koppers Company, Inc., has been awarded a contract to design and furnish equipment for a chemical plant to be erected at Torrelavega, Spain, it was announced recently by Joseph Becker, vice president and general manager of Engineering and Construction division.

The plant to be designed by Koppers will make dimethylaniline, a chemical intermediate used in dyes and in the manufacture of certain explosives. The contract signed by Koppers is with Real Compania Asturiana de Minas at Torrelavega.

Materials will be purchased for the most part in this country and are expected to be shipped to Spain late next March.

## Single Diesel Engine Powers Gravel Dredge

Several unique features of design engineered into a new gravel pumping dredge recently put into operation by the Consumers Sand and Gravel Co. of Kalamazoo, Mich., have greatly speeded up the company's production of gravel, road stone and plastering sand.

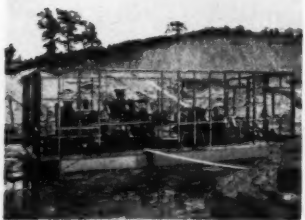
Instead of the two or three engines or a combination of engines and electric motors quite often used in such equipment, the dredge is driven by a single power plant. Main pump, priming pumps, stone ladder and winches are all driven through an ingenious system of power take-offs by one General Motors 6-110 Diesel engine. The dredge is, therefore, ready to operate at the press of a single button.

The clutch mechanism of the eight-inch Hubscher stone ladder is engineered so it can be reversed and also so that "slippage" occurs when a heavy obstruction such as an embedded log or boulder is encountered. It is also useful in the event the ladder is buried by a cave-in.

The dredge is 100 feet long by 16 feet wide and is built of 5/16 inch plate. It has nine water-tight bulkheads and will remain afloat with any two of them flooded. Carefully designed flotation assures perfect "trim" of the dredge regardless of position of the ladder. The suction pipe is 75 feet long and will dredge to a depth of 50 feet without adding additional pipe.

The dredge was built by The Earle Equipment Company, Detroit Diesel Engine Division Distributors in Detroit, Michigan. Jack Deakins, Sales Engineer of the Earle Company, was the designer.

*Below — Close-up of Consumers' dredge showing single power plant, a two-cycle General Motors diesel engine, which drives the Hetherington-Berner eight-inch pump, the eight-inch stone ladder, priming pumps and winches.*



## Harvester Sales Reported At \$929,408,000 Record

The International Harvester Co. has reported sales increased to a record \$929,408,000 in the nine months ended with July. Comparable sales a year ago were \$722,860,000. Higher taxes prevented earnings from making comparable gains.

Issued by John L. McCaffrey, president, the report revealed net income of \$48,396,000 after \$75,250,000 for taxes. Earnings were equal to \$3.36 on each 13,130,891 common shares and compare with \$45,534,000, or \$3.19 each on 12,932,904 shares in the previous year's period when taxes were only \$26,750,000.

"Seasonal factors normally experienced were again prevalent and sales tended to turn downward in mid-summer toward the end of the July quarter," Mr. McCaffrey observed.

He said, "Inflationary influences are causing our operating costs to rise at a rapid rate. We face the prospect, too, of price resistance on the part of our customers."

The International Harvester head noted the company is receiving increasing volume of defense and export business. On July 31, its defense contracts totaled \$382,000,000 of which only about \$48,800,000 had been delivered. "Strong foreign demand continues in many countries of the free world, especially in Latin America," Mr. McCaffrey stated.

"Our 1951 sales will go substantially above the billion-dollar mark," he continued. "Despite the greater sales volume, however, it is probable 1951 net income will not equal that of 1950."

"Production in the May-July quarter would have been seven to eight per cent higher had it not been for materials shortages. These continue to create problems for the company, though full effects for the fourth quarter cannot be determined at this time," he added.

## Link-Belt Elects Becherer Executive Vice-President

Robert C. Becherer has been elected executive vice-president of Link-Belt Co., with headquarters at Chicago. Board action also included the declaration of a regularly quarterly dividend of 60 cents per share of common stock, and an extra dividend of 60 cents per share, both payable December 1, 1951 to all stockholders of record November 2.

Mr. Becherer was elected vice-president last March. He joined Link-Belt in 1923 upon graduation from Purdue University in chemical engineering and has been general manager of the company's Ewart plant in Indianapolis since 1947.

Richard E. Whinrey, assistant general manager at the Ewart plant at Indianapolis has been appointed general manager of this plant to succeed Mr. Becherer in this capacity.

## A. C. Motors Described

Standard construction features of its low speed, coupled-type, pedestal-bearing synchronous motors are described in a new bulletin.

The features described are available in pedestal-bearing synchronous motors in ratings approximately 100 horsepower and larger at speeds of 450 rpm or less. Motors of 1.0 power factor or 0.8 or better leading power factor are available.

Copies of "Allis-Chalmers Coupled-Type, Pedestal-Bearing Synchronous Motors," Bulletin 65B7648, are available upon request from Allis-Chalmers Manufacturing Co., 1083 S. 70th Street, Milwaukee, Wisc.



Above—Eric Nelson, Harnischfeger service manager, shows Vice President Henry Harnischfeger the specially-designed emblem used during P. & H. National Service Week.

## Harnischfeger Program Stresses Value of Proper Upkeep

"Proper care means longer wear." This theme was emphasized during National Service Week, September 15 to 21, observed by over 700 dealers, branches and warehouses of Harnischfeger Corp., Milwaukee.

P. & H. National Service Week was initiated to make users of Harnischfeger equipment, both in the industrial and construction fields, more aware of the need and the value of proper and timely maintenance work, said Henry Harnischfeger, vice-president of the 67-year-old firm that makes excavators, cranes, hoists, arc-welding equipment and other construction and industrial items.

Each sales outlet for P. & H. equipment carried out a program designed to implement National Service Week efforts in its own area. A special emblem focused attention of all interested parties on the value of the campaign. It was used in windows, in literature and as a sticker for letterheads, to mention a few.

Other steps aimed at making the week a significant event included providing the owner of P. & H. equipment with suggestions to help him keep it in good condition, thereby reducing "down time." Also included were the training of additional service personnel and the stocking of much larger quantities of reserve parts in P. & H. branches and warehouses.

"We cannot over-emphasize the need for proper maintenance these days," said Mr. Harnischfeger. "With many of our raw materials on allocation, and so much of the available production going to fill government contracts, there just won't be enough new equipment to go around. A great deal of P. & H. equipment already in use is working for the defense effort, directly or indirectly; therefore we feel that it is to the national interest that we help our customers get the maximum use out of their present machines."

## Croysdale Named Manager Of Bartlett Hayward Plant

William Croysdale, assistant to manager of the production department of the Metal Products Division of Koppers Co., Inc., has been named manager of the Bartlett Hayward Plant of the Division in Baltimore.

W. F. Perkins, vice president and general manager of the Division, said that Mr. Croysdale will be responsible for all activities of the manufacturing departments of the Bartlett Hayward plant including the foundry, the steel fabricating shop, three machine shops, the forge, blacksmith and rocket shops.



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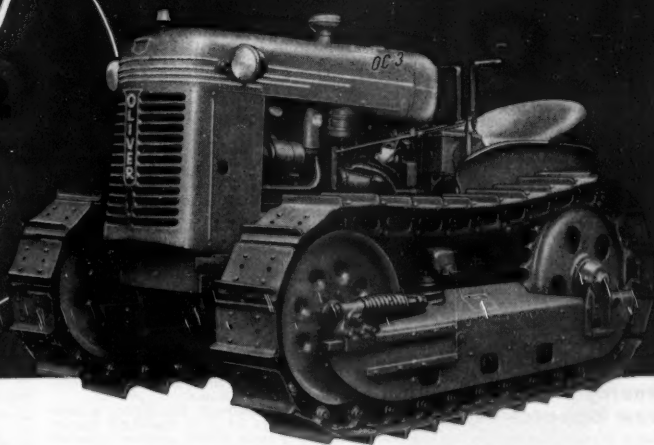
**DOZING**



*the NEW*

**OLIVER**

**OC-3**



Here's the greatest little crawler tractor you've ever seen . . . the new Oliver Industrial "OC-3". It's ideally balanced for most effective loading and dozing . . . engine is mounted *back* so that front of tracks and radiator are practically in line. This better balance gives you 40% more lift with a front end loader . . . does a superior job of dozing and grading because blade is mounted close to the tracks for easier handling . . . precise control! And, operators find this bal-

anced tractor far easier to handle . . . far less fatiguing.

The new Oliver Industrial "OC-3" gives you a full 22 drawbar horsepower . . . plenty of power for jobs in its size. It's ruggedly built for the tough jobs . . . keeps maintenance costs down. Complete accessibility makes servicing easy.

For the complete story on the new Oliver Industrial "OC-3" and how it can help your operations, see your Oliver Industrial Distributor.

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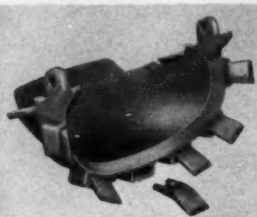
Industrial Division: 19300 Euclid Avenue, Cleveland 17, Ohio

*A complete line of industrial wheel and crawler tractors*



# Equipment . . .

## Parsons Designs Time-Saving Bucket Tooth



Parsons "Tap In" bucket teeth for All Trenchliners.

Development of Tap-In bucket teeth as standard equipment on all Trenchliners has been announced by the Parsons Company of Newton, Iowa. Principal feature of the newly designed, self-locking tooth is the "easy-in, easy-out" time saving replacement involved. A subsidiary of Koehring Company, Parsons manufactures four sizes of Trenchliners that provide a wide digging range for trenches; 5 to 72 inches in width, up to 17 feet in depth.

Tap-In teeth eliminate the need for bolting or crimping edges to hold teeth in position. A precision fit taper locks the tooth firmly in place either on buckets or sidecutter bars. Sturdy tooth holders are integrally cast with the bucket lip for positive tooth support. By welding adapters to the buckets, Trenchliners of any age can be converted to use Tap-In teeth.

Made of the finest grade alloy steel and heat treated, Tap-In teeth are designed with added clearance for maximum wear before replacement becomes necessary. In addition, Tap-In teeth need not be reversed. The tooth is designed to retain a sharp point by constant use until worn down to clearance.

According to the Parsons Company, Tap-In teeth will give a bigger yardage performance. The new tooth costs less, has a longer service life and saves replacement time. When replacement does become necessary, changes can be made fast, with minimum delay due to down time.

## General Motors Opens New Research Building

General Motors last month opened the office, shop and dynamometer buildings of its engineering staff at the new Technical Center north of Detroit at Mound and Twelve Mile roads.

Engineering Staff, headed by Vice President Charles A. Chayne, occupies the first of five building groups on the 813-acre site. Eventually the area will contain GM's Research Laboratories Division, Process Development Section, Styling Section and a Service Center.

The overall Technical Center project is expected to be completed in the next two or three years, giving General Motors the largest and most comprehensive facility of its kind in the automotive industry.

At this time the entire project is from 35 to 40 per cent completed. Now operating, in addition to Engineering Staff buildings, are the main power house, several small utility buildings and the gate houses.

Meanwhile, in the research laboratories group at the north end of the site, the metallurgy building, housing an experimental foundry, will be completed in the near future. The research mechanical

(dynamometer) building is half completed and ground has been broken for the processing (shop) building.

The Technical Center Staff, now occupying temporary wooden structures, eventually will move into a Service Center of its own, and the shop building for this staff is under way at the northeast corner of the area.

Engineering Staff personnel at the Technical Center numbers approximately 450 persons, including staff heads, engineers, machinists, shop men, mechanics and various other technical specialists.

Three functionally modern buildings designed by Saarinen-Saarinens and Associates of Bloomfield Hills, Mich., keynote the unique architecture that distinguishes the GM Technical Center.

Architects-engineers on the project are Smith, Hinchman & Grylls, Inc., of Detroit, and the general contractor is Bryant & Detwiler Company of Detroit.

## Caterpillar Resumes Operations, Workers Get Wage Raise

The longest strike in the history of Caterpillar Tractor Co., Peoria, Ill., has ended, with factory operations resumed October 1. The strike was called July 30 by CIO-UAW Local 974.

Settlement followed two months of negotiations on wage increases. Company and Union representatives meeting in Washington, D. C., with Federal mediators, reached an agreement on September 27 which was ratified by the Union membership on September 30.

The agreement provides for an across-the-board increase of 13½ cents per hour for employees in the bargaining unit, along with a cost-of-living wage adjustment next February and is being submitted to the Wage Stabilization Board.

The loss in sales over two months was \$75,000,000, according to a projected estimate. The community lost an estimated \$18,000,000 in wages and local purchases. More than 22,000 production employees were idle during the strike.

## Diesel Engine Division Making Big Expansion

A \$1,000,000 building expansion program to increase production facilities of the Detroit Diesel Engine division of General Motors is announced by General Manager W. T. Crowe.

The announcement highlights a production figure of over 50,000,000 horsepower in 2-cycle Diesel engines attained by the Division since 1938. According to Mr. Crowe, this is the eighth major expansion the Division has made and adds almost 80,000 square feet to the 1,000,000 square feet now under cover.

## Allis-Chalmers Announces Nine Advancements

Election of six new officers and advancement of three other officers of Allis-Chalmers Manufacturing Co. was announced by President W. A. Roberts.

The executive changes were made by the board of directors in its regular monthly meeting.

Four new vice presidents were elected. W. G. Scholl, general sales manager of the tractor division, was named vice president in charge of sales for the tractor division, and C. W. Schweers, director of sales in the general machinery division was named vice president in charge of sales for the general machinery division.

J. F. Roberts, director of engineering in the general machinery division, was

named vice president in charge of engineering for the general machinery division; and W. A. Yost, manager of the mechanical power department, was named a vice president of the general machinery division.

W. E. Hawkinson, vice president, secretary and treasurer of the firm, was named vice president in charge of finance and secretary. G. F. Langenohl, assistant treasurer, was advanced to the position of treasurer. N. D. Johnson, assistant secretary, will continue to serve in that capacity and assume additional responsibilities as assistant treasurer.

Two new assistant comptrollers were also named. They are E. J. Dietrich, assistant to the comptroller, and T. D. Lyons, works comptroller.

## Southeast Leads Eastern Nation in Lumber Output

The three States of Georgia, Florida and Alabama last year produced more lumber than did any other area in the eastern half of the United States, and stood second among all regions in such production, according to Merrill C. Lofton, regional director of the U. S. Department of Commerce.

In the three-State area the total production was placed at 4,700,000,000 board feet, lumber tally, including 3,700,000,000 feet of softwood and 999,300,000 feet of hardwood.

Last year's output in the three States was estimated by the Bureau of the Census in a report just issued as some 1,500,000,000 board feet more than in 1949, which totalled 3,200,000,000 feet, including 2,700,000,000 feet of softwood and 542,900,000 feet of hardwood.

In the eastern half of the country, the Lower Mississippi States, comprising Mississippi, Arkansas, Louisiana, Oklahoma and Texas were second in total production with an output of 4,600,000,000 feet and the South Atlantic States, including North Carolina, South Carolina and Virginia, were third with a total of 4,500,000,000.

In the nation as a whole, last year's total lumber production was estimated at 37,900,000,000 board feet.

## N. P. A. Curbs Amended

The National Production Authority, U. S. Department of Commerce, has amended Direction 3 to CMP Regulation 1, authorizing manufacturers to order up to 40 per cent of their quarterly allotments of these materials for delivery in any month in that quarter.

Previously manufacturers were permitted to schedule not more than 35 per cent of their quarterly allotments of controlled materials for delivery in any one month.

Other provisions of Direction 3 remain the same. These include permission for controlled materials users to schedule for delivery in one month up to 50 per cent of their advance allotments for a future quarter. Advance allotments are made by NPA to permit adequate time for scheduling of future orders.

In addition, a provision permitting manufacturers to purchase minimum mill quantities—or carload lots, in certain instances—is continued.

Additional information may be obtained at Department of Commerce NPA field offices.



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PORTLAND

HIGH EARLY STRENGTH

AIR ENTRAINING

MASONRY

## Oklahoma City's Construction Picture Described

Oklahoma City set construction records in 1950 but these are well on the way of being broken with new structures rising in every section of the city. And as for the future, the recently announced industrial program marks the beginning of a new era.

Included in this new industrial program, which runs into the millions of dollars, is a new eight-lane highway in the northwest part of Oklahoma City and the shifting of miles of railroad track. In this area a number of new industrial districts are being established to serve both light and heavy industry. Firms throughout the country are already negotiating for space.

And in the western part of Oklahoma City a mile-square area is being developed. Most of the railroad tracks that criss-cross it are being taken out. Here will be constructed a new state fairgrounds, a demonstration farm and polytechnic high school and a stadium.

Drawing to a close is the first lap of a four-lane urban road that will completely surround Oklahoma City. Construction of all types that has taken place in Oklahoma City the past few months would include:

The construction which is beginning on a new \$200,000 repair shop at Tinker Air Base. This is slated for completion next May. The shop will be used for maintenance of special purpose vehicles and powered ground equipment.

Half of the Hoster Steel Corporation's \$700,000 mill has been finished with the electric furnaces turning out ingots from Oklahoma scrap iron. Now in the process of construction is the rolling section of the mill. When completed this will be the smallest integrated steel mill in the world.

About a month ago the first Oklahoma City made airplane rolled off the assembly line. Aero Design and Engineering Co. is the manufacturer of the new two-engine ship. The production line will complete two planes a week. All kinds of records in aircraft production were broken in setting up this plant. Only eight and one-half months elapsed from the time the company secured space till the first plane rolled off the line.

Castor beans produce castor oil which is of top importance to the military defense program. The United States has been importing four-fifths of its crop because of the high cost of hand harvesting the crop. But now the Boardman Company in Oklahoma City is manufacturing a new mechanical harvester that is expected to make castor beans a major crop in all the southern states. Boardman is rolling off two machines daily from its assembly line.

Oklahoma City's parking problem is being relieved by the construction of a new parking hotel in the downtown area which will handle 1,250 cars a day. It is being built by J. Wiley Richardson, a retail businessman and former Chamber of Commerce president. The four-story building will cost \$400,000.

Black, Sivalls & Bryson, in Oklahoma City, are expanding their present facilities

by constructing a new building costing \$500,000 in which \$300,000 worth of equipment will be installed. The company hopes its new expansion will increase their output here by 50 per cent.

The Be-Mac Transport Co. has just completed a new terminal building doubling its former capacity. Yellow Transit Co. is constructing a series of buildings on a five acre tract bought from Oklahoma Industries. Recently completed is the new terminal with a total square footage of 27,000.

Oklahoma Natural Gas Co. recently moved into its new \$850,000 building in the Oklahoma Industries industrial district. Over 50,000 square feet are roofed in the one story steel and brick structure.

Also in a new plant in the same area is the Macklanburg-Duncan Co., an old established Oklahoma City firm which sells its products all over the nation. The plant covers 150,000 square feet of floor space and is of steel and brick construction.

Oklahoma City University announced a 15-year expansion program to cost \$21,000,000. Now under construction and due for completion in the spring is their \$500,000 library. Due for construction in the future are a commerce building, art museum, home economics building, graduate school building, technological building, a number of classroom buildings and dormitories.

Walter E. Allen Co. has recently moved into a new plant in the Oklahoma Industries industrial district giving them a modern plant facility of 20,000 square feet. Work has started on defense contracts.

The Arrow Bag Co., of Oklahoma City, completed a 15,000 square foot addition to their plant and the Auto-Lite Battery Corp. completed an expansion program which almost doubled their production output.

Harris Meat Packing Co. is in the process of completing its \$200,000 plant. Harter Marblecrete Stone Co. in recent months completed a \$250,000 expansion which included an additional building and five autoclaves used in curing cement blocks and bricks under steam pressure. They now cover 200,000 square feet.

Compared to the tremendous industrial expansion in store for Oklahoma City in the next few years, they are now in their infancy. In the planning stage are not only new concerns which will make this their future home but expansions of established firms—and when established firms expand and then expand again the value of Oklahoma City as a site for new industries becomes doubly important.

### Special Prison Work Costs \$1,163,000 in North State

North Carolina has allotted \$1,163,000 for a special prison construction program, including \$510,600 for projects at the Women's Prison and \$197,500 for those at the Central Prison, according to an announcement from the State Prison Department.

(Continued on page 50)

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Retractable Wheels cut the cost of your short hauls.

Supposing you have been working a week down one side of a job and want to get back to start the parallel course — it takes just a few minutes time to let down your Adnun Retractable Wheels and hoist the Adnun up to the tail gate of your truck. You are back at the beginning and ready to start on the new course before you could load the ordinary black top spreader on a trailer!

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The Adnun cuts truck and trailer rental, saving you costs up to \$12.50 to \$25.00 an hour and it saves time in loading and unloading.

Add to this feature Adnun versatility of spreading aggregates, Adnun ability to lay a tighter joint for safer roads, lower upkeep costs, freedom from rebuilding and other features that reduce construction costs and increase output. Ask for the booklets, "11 Basic Things..." and "Roads That Last". They bring out some new thoughts on asphalt paving equipment.

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## BLACK TOP PAVER



## Special Prison Work Costs \$1,163,000 in North State

(Continued from page 48)

Among the women's prison projects are two honor cottages to cost \$170,000, a \$100,000 chapel-auditorium, gymnasium and a \$98,000 central heating plant. Central prison will get a \$100,000 vocational building and a \$75,000 remodeling job on its administration building. A \$150,000 maximum security camp is planned in McDowell County.

The individual projects, as announced by O. M. Banker, business manager of the prison system, are:

Women's Prison—\$8,000, dining room, floors, steam tables equipment; \$5,000, remodel farm house and barn; \$170,000, two honor cottages; \$7,000, honor cottage furnishings; \$15,000, isolation ward addition; \$34,000, remodeling two dormitories; \$4,000, landscaping; \$98,000, central heating plant; \$16,000, steam and service tunnel to buildings; \$100,000, chapel-auditorium, gymnasium, furnishings; \$2,800, concrete sidewalks; \$10,800, sanitary sewer; \$8,000, water lines; \$32,000, surveying, engineering, architectural services;

Central Prison—\$75,000, administration building remodeling; \$100,000, vocational building, equipment; \$18,500 cold storage enlargement, machinery; \$4,000, bake oven replacement;

Disciplinary cells will be built in Warren, Orange, Robeson, Richmond, Cleveland, Rutherford, Haywood and Transylvania counties. They are estimated to

cost \$6,000 each.

Sick bay remodeling jobs, each costing about \$1,000, are planned in Edgecombe, Hertford, Martin, Greene, Lenoir, Washington, Bladen, Brunswick, Cumberland, Wayne, Vance, Caswell, Durham, Granville, Person, Chatham, Davidson, Harnett, Randolph, Anson, Mecklenburg, Montgomery, Union, Ashe, Caldwell, Davie, Forsyth, Surry, Wilkes, Alexander, Burke, Catawba, McDowell, Cherokee, Henderson, Jackson and Yancey counties.

Confinement cell remodeling projects, costing about \$4,000, are proposed in the following counties: Perquimans, Craven, Onslow, Columbus, Duplin, New Hanover, Pender, Franklin, Johnston, Nash, Wilson, Guilford, Rockingham, Lee, Moore, Scotland, Cabarrus, Rowan, Alleghany, Stokes, Watauga, Yadkin, Iredell, Lincoln, Buncombe, Macon.

Projects, each costing \$5,000, for remodeling confinement cells and sick bays are proposed in Halifax, Pitt, Sampson counties.

Remodeling confinement cells and building and equipping vocational shops are proposed in Gates, Beaufort and Stanly counties. Each will cost \$7,750. An \$8,750 project for remodeling the sick bay and confinement cell and building and equipping a vocational shop is proposed in Alamance County.

The Polk County sick bay-confinement cell project will have a second floor cell-block for cripples. Its cost is put at \$8,000. A similar project in Caledonia County will cost \$15,000. Expenditure for a negro

youth center is set at \$45,900.

Projects at Camps 22 and 25 will cost \$37,000 in addition to original estimates. One involves \$17,000 for the W. P. isolation ward; the other, \$20,000 for a cold storage plant.

## Cornthwaite Succeeds Clark as Test Engineer



A. B. Cornthwaite S. Clark

A. B. Cornthwaite has been made testing engineer of the Virginia Department of Highways, succeeding Shreve Clark, who retired July 1.

Assistant testing engineer since 1946, Mr. Cornthwaite is the second person in the history of the department to hold the testing engineer position. Mr. Clark headed the division from its beginning in 1920 until his retirement.

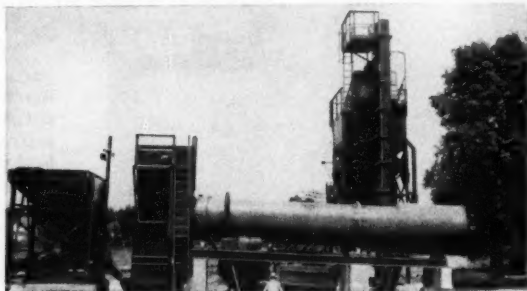
The new testing engineer joined the highway department in 1929 following graduation from DePauw University, Greencastle, Indiana, where he received

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his A. B. degree in chemistry.

A native of Hicksville, Ohio, he is a member of Alpha Tau Omega fraternity, the American Chemical Society, the Highway Research Board, and various committees of the American Society of Testing Materials. He served as lieutenant in the Navy during World War II and is a member of the United States Naval Reserve.

In his new post he will have charge of the testing of all materials used in the construction and maintenance of the State's 49,000 miles of highway.

Mr. Clark started the Virginia testing division in 1920 at Virginia Polytechnic Institute, Blacksburg, Va., where he was also assistant professor of highway engineering. Before joining the Virginia road department's staff, he was chief chemist and assistant testing engineer of the Ohio Highway Department. He was also connected with the Alkali Rubber Co. and the Goodyear Tire and Rubber Co.

A graduate of Ohio State University, class of 1906, Mr. Clark is a member of the American Chemical Society, American Society for Testing Materials, the Highway Research Board, American Association of State Highway Officials, and the Southeastern Association of State Highway Officials.

Past Chairman of Committee D-4 of the American Society for Testing Materials, he was recently elected honorary member of this Committee. He was also elected this year to membership in the University of Virginia Chapter of the Society of the Sigma Xi, honorary scientific society.

### Veatch Elected Fellow by Mechanical Engineers

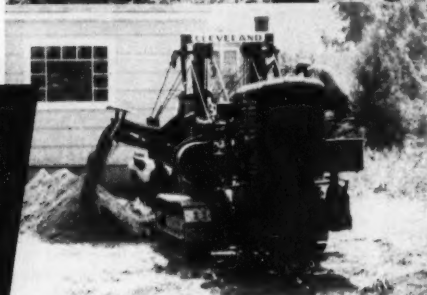
N. T. Veatch, member of the firm of Black & Veatch, consulting engineers of Kansas City, Mo., has been elected a fellow by the American Society of Mechanical Engineers. Born in Rushville, Ill., on August 25, 1886, Mr. Veatch received his education at the University of Kansas, graduating in 1909 with a B.S.C.E. degree and receiving a C.E. degree in 1924.

From his graduation until 1914 he was with the J. S. Worley Co. and Worley & Black, consulting engineers, predecessors of his present firm. He also was an instructor at the University of Kansas assigned to the State Board of Health. He was associated with the American Water Works and Guarantee Co. in charge of the water works property at Keokuk, Iowa.

Black & Veatch was established in January 1915, serving municipalities, government and private industry in the utility field. Water supply, sewerage, electric generation and distribution, natural gas distribution, together with special investigations, rate studies and appraisals of these utilities have constituted the major work of the firm.

Mr. Veatch has actively participated in the work of the firm and has personally directed many of the major engagements. Among the major cities served by the firm have been Cleveland and Cincinnati.

(Continued on page 52)



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Extra power, extra capacity that regularly pay off in bonus yardage even in rock and hard, frozen ground. Extra heavy-duty construction that cuts maintenance down-time and maintenance expense. Extra low ground bearing pressure and extra traction through the oversize full-crawler mounting that keep you stepping right along in mud, sand and sticky clay. Extra compactness, extra maneuverability for easy handling among narrow city clearances; extra low center of gravity for easy work on steep grades. Extra mobility for short, scattered jobs. And extra versatility and extra long service life for a lower machine investment and lower equipment overhead. Get the full story on these CLEVELAND "extras" today. The Cleveland Trencher Co., 20100 St. Clair Avenue, Cleveland 17, Ohio.



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## Veatch Elected Fellow

(Continued from page 51)

nati, Ohio; Denver, Colo.; Kansas City, Mo.; Memphis, Tenn.; Salt Lake City, Utah; Tulsa, Okla., and Wichita, Kan.

The private utility engagements include work for the Empire District Electric Co., Iowa Power and Light Co., Kansas City Power and Light Co., Kansas Power and Light Co., Missouri Power and Light Co. on steam electric generation problems, and the Puget Sound Power and Light Co. and Union Electric Co. on valuation work. The firm has served the state utility regulatory bodies in Arizona, Kansas, and Oklahoma.

The Federal Government was served in

World Wars I and II on various cantonments, airfields, etc., and the U. S. Atomic Energy Commission is now using the firm on work at Los Alamos, N. M., and other places in the United States.

Mr. Veatch is a past president of the American Water Works Association, and by appointment of President Truman is the engineer member of the National Water Pollution Control Advisory Board of the United States Public Health Service.

He is a member of the honorary societies of Sigma Xi, Tau Beta Pi, and Sigma Tau. He holds a citation from the University of Kansas for having brought honor to the University by reason of long, distinguished service in his field.

He is a registered professional engineer in 23 states, a member of the American Institute of Consulting Engineers, the American Society of Civil Engineers, the American Society for Testing Materials, American Public Works Association. He was elected to A.S.M.E. in 1921.

## Wave Engineers Meet Slated for Houston

The second annual national conference on coastal engineering will be conducted in the Gulf Coast region at Houston in November, announces Dr. Harold Vagt-borg, president of Southwest Research Institute.

The conference will be co-sponsored by Texas A. & M. Research Foundation, the University of Houston, the Rice Institute, the University of California, the Houston Branch, Texas Section, American Society of Civil Engineers, and other professional organizations and universities in the area.

Commending Dean M. P. O'Brien of the University of California for successfully initiating the nationwide conference series in Long Beach last year, the research administrator added:

"We are delighted that the Council on Wave Research of which Dr. O'Brien is chairman, selected the Institute to conduct the 1951 meeting with the co-sponsorship of universities and professional organizations in the area. A two and one-half day program is being planned to discuss such subjects as offshore drilling, harbor engineering, wave action, physical oceanography and related matters. Speakers will include Dr. W. A. Price of Texas A. & M. College, and Dr. J. W. Johnson, secretary of the Council on Wave Research at Berkeley."

An activity of the Engineering Foundation, the Council is concerned with solving engineering problems created by the normal action of waves and tides, as well as by hurricanes and other storms.

Charles E. Balleisen, acting director of Southwest Research Institute's Division of Oceanography and Meteorology, is conference secretary and has established an information bureau.

## Howe Erecting Building for Transcontinental Gas

T. D. Howe Construction Co., Inc., of Houston, Texas, is proceeding on the new office building for the Transcontinental Gas Pipe Line Corp.

Containing 90,000 square feet on its three floors and basement, the building occupies two-thirds of a city block. It is of reinforced concrete poured on metal pans faced on three sides with granite and limestone and on the fourth with brick. There are no windows, as the building will be completely air conditioned, using gas.

Entrances are glass and aluminum. The elevator lobbies and corridors have a marble wainscot. Floors are terrazzo, rubber tile and carpeted. Walls are plaster, except in executive offices, which are paneled. All ceilings are acoustically treated. One wing of the structure is to be a garage for employees.

Subcontractors and material firms on

# A pledge

WHEREAS, the demand for Dickey Clay Products far exceeds the supply, despite constantly increasing production

WHEREAS, Dickey values above all else the friendship and good will of its customers and dealers...

AND WHEREAS, Dickey knows its prosperity rests on the quality of its products and service to the public...

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THAT absolute fairness shall prevail in the distribution of Dickey products.

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Aetna Steel Products Co., metal doors;  
Basen Steel Works, miscellaneous iron;  
Bering-Cortes Hardware Co., hardware;

B. B. Bettell & Son, Inc., painting;  
Blumenthal Sheet Metal Works, aluminum light troughs;

A. M. Bowles Co., waterproofing;  
Buie Building Materials Co., windows;  
Cold Spring Granite Co., granite;  
The Detering Co., gypsum blocks;  
R. J. DeWees & Son, Inc., toilet partitions;

R. H. Folkman, vault doors;  
Howard P. Foley Co., wiring;  
Haley Brothers, granite and limestone;  
J. & B. Manufacturing Co., metal pans;  
Macatee, Inc., acoustical ceilings;  
James M. Pryor Co., steel doors;  
H. H. Robertson Co., galvanized deck;  
Rubin Glass and Mirror Co., glass and glazing;

J. A. Sherman & Son, sheet metal;  
South Texas Stone Co., Cordova cream Texas limestone;

Southwest Steel Products Co., reinforcing steel;

Texas State Tile & Terrazzo Co., ceramic tile;

Texas Millwork Co., millwork;  
Tobin & Rooney, lath and plaster;  
White Marble Co., marble.

Architects and engineers for the building are Zimmerman & Bible.

## Earth's Oil Supply May Be Endless

The earth's oil reserves may be inexhaustible, J. Calvin Brown, president of The American Society of Mechanical Engineers, said when he spoke at the "welcoming luncheon" on the first day of the sixth annual conference of the petroleum division of the A.S.M.E. at the Mayo Hotel, Tulsa, Okla. Quoting from a lecture of Dr. Robert A. Millikan, noted physicist, Mr. Brown said it is "orthodox astronomy" that the stars radiate away their masses through the mere act of giving off light and heat.

With its enormous interior temperatures of about 40 million degrees centigrade, the sun transforms its mass into radiant energy which is received by the earth where part of it is stored in coal and oil. Mother Earth has stowed away in coal alone enough solar atomic energy to keep us going for 4,000 years.

"Therefore, there is some doubt whether or not we will exhaust all our oil supply, because if this energy sent to the earth from the sun is actually stored in the earth then oil will be continuously formed by a process of transformation," declared the A.S.M.E. president.

## Commerce Body Plans Road Finish Fete

Sand Springs, Okla., chamber of commerce is organizing to celebrate the near future completion of nearly three miles of four-lane asphaltic concrete paving built by the Standard Paving Co. of Tulsa, for the Oklahoma state highway commission at a cost of \$413,539.

## same men, same tools do 4 days' work in 3



### JAEGER "Air-Plus" COMPRESSORS

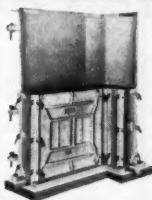
75 ft. deliver 15% to 25% more air at lowest cost per cubic foot of any compressors on the market, to run today's tools at their full efficiency, greatly increasing your production with the same men and tools.

125 ft. See your Jaeger distributor or send for Catalog.

185 ft. THE JAEGER MACHINE COMPANY 115 Dublin Avenue  
250 ft. Columbus 16, Ohio  
365 ft.  
500 ft.

PUMPS • MIXERS • HOISTS • TRUCK MIXERS • PAVING SPREADERS and FINISHERS

## Save manpower time and material



When placing concrete, use this nationwide Form Rental and Engineering Service to increase profits, reduce costs.

Standard units of Economy Forms fit most jobs. But where needed, special forms can be built to specification.

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- Water or Sewage Treatment Plants
- Tanks — Circular and Rectangular
- Bridges, Culverts and Box Tunnels

### ECONOMY FORMS CORP. HOME OFFICE: DES MOINES, IOWA

## ECONOMY FORMS

metal forms for concrete construction

District Sales Offices:  
Kansas City, Mo.  
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Minneapolis, Minn.  
Milwaukee, Wis.  
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Cincinnati, Ohio  
Pittsburgh, Pa.  
Springfield, Mass.  
Metuchen, N. J.  
Decatur, Ga.  
Dallas, Texas  
Los Angeles, Calif.  
Denver, Colo.

## TILLEY FLOODLIGHT PROJECTOR

Burns 40 hours on  
6 pints of Kerosene



This Model, F. L. 8 Floodlight is shown complete with short stand—weighs 27 lbs. Overall height 26 inches. Also available on 5 to 8 ft. tripod with turntable top—\$65.

\$45.00 F.O.B. CHICAGO

## W. W. LEE & SON

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CHICAGO 4, ILLINOIS

- A self-contained unit with no cables—entirely independent of batteries, generators, and the like, which makes it more mobile. Wind and rain proof.
- The TILLEY Floodlight Projector gives a white light of 5000 reflected candle power. It is just the thing for night construction work and for emergencies when power is not available. For complete details we suggest you write.

## Construction Equipment Named Missouri Distributor for Wooldridge

Appointment of Construction Equipment Corp. as exclusive distributor for Wooldridge earthmoving equipment through western Missouri and southern



T. H. Ryan, Jr.

Illinois has been confirmed by an announcement issued by the two firms.

Tom H. Ryan, Jr., widely known for his experience in the field of rubber-tired equipment, is playing a leading part in the development of the new corporation, which was formed for the specific purpose of offering complete sales and service facilities to users of Wooldridge and allied equipment lines.

With main offices located at 2118 South Seventh Street, St. Louis 4, Mo., the firm has also established service representation in Fulton and Sikeston, both in Missouri. Complete modern shop and field service is now being made available to the entire area.

Prior to completion of the distributor arrangement, Mr. Ryan spent considerable time in the Wooldridge plant, studying the firm's engineering developments and manufacturing practices. He supplied

this with field trips to observe the new Terra Cobra in actual contractor job operations. Upon his return, he expressed complete confidence in the machine's ability to perform, and was particularly impressed by its ruggedness, extreme simplicity, ease of servicing, and fast loading and dumping characteristics.

## Kentucky Makes Awards

(Continued from page 35)

2 miles, R. B. Tyler Co., Louisville, \$28,914;

McCreary — Yamacraw-Co-operative road, grade, drain, and traffic bound surface, 1.7 miles, Greer Brothers and Bullock, London, \$58,617;

Pulaski — Nancy-Faubush-Jamestown road, grade, drain, and traffic bound surface, 4.9 miles, Nally and Gibson, Springfield, \$54,387;

Russell — Jamestown-Faubush-Nancy road, grade, drain, and traffic bound surface, 2.5 miles, Arnett Construction Co., Richmond, \$23,463;

Shelby and Jefferson — Mt. Eden-Finchville-Fishersville road, 7.2 miles; Shelbyville-Taylorsville road, 8.4 miles; Finchville-Fishersville road, 1.8 miles, bituminous surface, Carey Construction Co., Lexington, \$105,432;

Johnson, Magoffin, and Morgan — Salyersville-Prestonburg road, 9 miles; Salyersville-Royalton-Hindman road, 7.1 miles; Paintsville-West Liberty road, 6.8 miles; West Liberty-Salyersville road, 10.3 miles, bituminous surfacing, Ken-

tucky Road Oiling Co., Frankfort, \$220,365;

All other projects financed by the state call for bituminous surfacing.

Barren—Glasgow-Bowling Green road, 11.7 miles, R. E. Gaddie, Bowling Green, \$17,143;

Oldham — Russell's Corner-LaGrange road, 3.2 miles; LaGrange-Shelbyville road, 2.1 miles; Russell's Corner-LaGrange road, .6 of a mile, Franklin Construction Co., Frankfort, \$4,257;

Bracken and Mason — Brooksville-Falmouth road, 4.4 miles; Germantown-Mt. Olivet road, 6.3 miles; Maysville-Mt. Olivet road, 12.8 miles; Maysville-Paris road, 10 miles; Eaton Oil Works, Inc., Covington, \$30,636;

Boyd — Ashland-Catlettsburg road, 3.8 miles, Middle States Bituminous Corp., Ashland, \$6,760;

Letcher — Sandlick-Logan Gap road, 3.3 miles; Franks Creek-Eolia road, 1.4 miles; Bottom Fork road, 0.9 miles; Cumberland River-Pound Virginia road, 5.2 miles; Isom-Kite road, 0.7 miles; Whitesburg-Kings Creek road, 4.7 miles; Jenkins-Kona road, 3.7 miles; Millstone-Deane road, 1.2 miles; Tillie-Elsiecoal-Flint road, 6.9 miles; Franklin Construction Co., Frankfort, \$30,811;

Hopkins and McLean — Earlington-Dawson Springs-Princeton road, 8.7 miles; Calhoun-Livermore-Hartford road, 9.3 miles; Calhoun-Livermore-Hartford road; Calhoun-Livermore-Hartford road, 3 of a mile; 3.1 miles, State Contracting



Dragline, Clamshell,  
Custom-Built Buckets  
Stone and Wood Grabs

## WELLMAN Williams Type

### MORE YARDAGE PER DAY

● Elimination of excess materials and careful weight distribution permit rapid, rhythmic operation of Wellman Dragline Buckets. Operators can cover a wider digging radius with this streamlined bucket.

Built of special alloy steel, using strong welded design, Wellman buckets provide strength and stamina for long-term economy. Perforated designs also available. You'll do better with Wellman.

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descriptive bulletins

**THE WELLMAN ENGINEERING COMPANY**  
7000 Central Avenue  
Cleveland 4, Ohio

and Stone Co., Inc., Hartford, \$49,868;

Projects financed by the 2-cent gas tax were listed in the following counties:

Davies — Ensor-Ky. 54 road, reconstruction and bituminous surface, 4.2 miles, State Contracting and Stone Co., Hartford, \$28,791;

Logan — Epleys Station-Stewart Chapel road, 1.5 miles; Stevenson Mill road, 1.5 miles; Cave Spring-Lick Skillet-Ky. 102 road, 3 miles; Cave Spring-Dot road, 5.7 miles; Schochoh-Adairville road, 1.5 miles; Schochoh-Adairville road, 1.3 miles; Cormelius Avenue in Russellville, .1 of a mile; Blakey Street in Russellville, .1 of a mile; Morgan Street in Russellville, .3 of a mile; Seventh Street in Russellville, .1 of a mile; South Evans Street in Russellville, .2 of a mile, State Contracting and Stone Co., Hartford, \$64,961;

All other rural road projects call for reconstruction and traffic bound surface.

Franklin — Shadrick Ferry road, 4.8 miles, George H. Cheek Construction Co., Frankfort, \$82,863;

Pendleton and Harrison — Morgan-Boyd road, 4.9 miles, Tye and Wells, Falmouth, \$49,727;

Trigg — Riley Hollow road, 1.2 miles Swinney Brothers, Kirkmansville, \$9,063.

## Alcoa Starts Construction on Rockdale Smelter

Construction on the new Aluminum Company of America smelting plant at Rockdale in Milam County, Texas, is scheduled to begin soon.

It is expected that the metal-producing facilities at Rockdale will be in partial operation late in 1952. When full operation is reached in 1953, a total of approximately 1,000 persons will be employed by the company at the plant. The aluminum production capacity of the plant will be in the neighborhood of 170,000,000 pounds annually.

The large quantities of electric power required for the plant will eventually be provided by generating facilities to be erected adjacent to the project. The power plant will be designed, constructed and operated for Alcoa by the Texas Power and Light Co. It will be the first aluminum smelting plant in the nation to use electric power generated by burning lignite, a semi-bituminous fuel.

The lignite will be mined in Milam County, in the vicinity of the power plant, by the McAlester Fuel Co. Alcoa is acquiring the Rockdale, Sandow &

Southern Railroad from the McAlester Fuel Co., and will operate it.

Since aluminum production at Rockdale is scheduled to begin before completion of the power plant, Texas Power & Light Co. will furnish initial quantities of electricity from other generating sources.

About 1,500 persons will be employed at Rockdale project during the peak construction period. This figure is approximately 50 per cent larger than the eventual permanent employment at the plant. The majority of Alcoa's permanent employees will be recruited from Milam County and surrounding areas.

The Rockdale construction will be carried out through a series of sub-contracts under the supervision of Alcoa's construction division. Insofar as is possible, the work will be awarded to contractors from Texas and the Southwest area. The aluminum smelting plant has been designed by Alcoa's own engineering staff, and will be a near-duplicate of another company plant currently under construction in Washington State.

Initially, the power-generating plant will be supplied with lignite which has been crushed and dried for use directly as fuel.

## •• DREDGES ••

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for landlocked, inland waters

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Test  
Borings  
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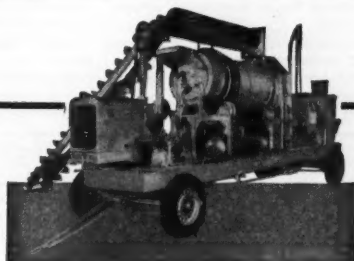
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CORE BORINGS for Foundations, Dams, Bridges and  
all Heavy Structures — GROUT HOLES  
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### VIRGINIA ENGINEERING COMPANY, INC.

Government — INDUSTRIAL — Municipal  
GENERAL CONTRACTORS  
NEWPORT NEWS, VIRGINIA



## Portable Asphalt Plants For City, State, Repairs and Small Contract Work

These 8-10 tons per hour Asphalt Plants economically repair almost any pavement. Asphalt, brick, concrete, macadam, can be resurfaced or patched. Alleys, driveways, sidewalks, industrial plants can be paved.

Produces for immediate hot laying, or for deferred cold patching. Match any bituminous surface.

Mixes at plant, including labor, fuel, and overhead, cost about \$4 per ton, with \$2 aggregate. Average 160 to 200 sq. yds. 1" thick per hour. A money-maker for small contract work.

Also larger plants, 15 and 30 tons per hour.

*Write for catalog and name of nearest dealer.*

**Elkhart White Mfg. Co. Indiana**

### SYDNOR PUMP & WELL CO. INC.

ESTABLISHED 1889

We Specialize in Water Supply and in Pumping Equipment  
1305 BROOK ROAD, RICHMOND 22, VA.

## South's Construction Record

(Continued from page 21)

Total value of new construction put in place, say the two federal agencies, was over \$2,800,000,000 in September, or one per cent less than the totals for the preceding month and for September of 1950.

Private outlays of \$1,860,000,000 were off two per cent from the August level and eleven per cent from September of last year. Public expenditures amounted to \$966,000,000, two per cent above August and twenty per cent above public outlays in September, 1950.

Private home building, says the report, appears to have been stabilized for the time being at about two-thirds of the 1950 record level. Commercial building dropped in September, when work consisted largely of completing projects started before restrictions were applied.

During the first nine months of 1951, total outlays were set at above \$22,000,000,000, or ten per cent more than in the same period of last year.

Industrial expansion and rising military construction volume, together with larger amounts of commercial and institutional building so far this year were said to have maintained an over all activity at record levels despite the private dwelling drop.

Some construction is expected to come to a halt during the next few months, due to the restrictions imposed, by the federal government. According to the Associated General Contractors of Amer-

ica, fourth quarter allotments of structural steel reveal that only carefully screened military construction and aluminum expansion programs were given 100 per cent of their requirements. General commercial construction was allotted only eleven per cent.

Glen W. Maxon, president of that national contractors organization, observed that the federal government has taken away from the general contracting industry the ability to give the public bodies and private investors in construction the reasonable assurance that projects can be completed on normal schedule and at estimated costs.

## Jacksonville's Record

(Continued from page 31)

Division yards to handle exclusively the repair and conversion of Navy vessels. This new yard operates as a self-sufficient auxiliary to the nearby Merrill-Stevens yard.

Gibbs Corp. has added to its shipyard equipment an 18,000 ton capacity dry dock, the largest commercially operated floating dry dock between Baltimore and Mobile.

The St. Johns River is also involved in this industrial expansion. A \$6,000,000 improvement to the river channel from Jacksonville to the ocean and construction of the Dames Point-Fulton cutoff is now virtually complete. The river channel is being deepened to 34 feet and widened to a minimum of 500 feet which

will take care of the deepest draft commercial vessels now in use. The Dames Point-Fulton cutoff straightens and shortens considerably the channel route between Jacksonville and the ocean. In addition, a \$2,500,000 start has been made on a proposed \$20,000,000 expenditure for the improvement of the inland waterway to provide a 12 foot channel 150 feet wide from Jacksonville to Miami, Fla.

### January to August, Residences

Jacksonville within city limits	\$4,476,491	859
Suburban areas contiguous to city limits	10,567,975	1,805
	\$15,044,466	2,664

## PUBLIC ENGINEERING

(Dams, Drainage, Waterworks, Sewers, etc.)

	September, 1951	Contracts Awarded First Nine Months 1951
	Contracts Awarded	Contracts to be Awarded
Ala. ....	\$ 1,143,000	\$ 3,625,000
Ark. ....	688,000	14,900,000
D. C. ....	380,000	2,826,000
Fla. ....	9,052,000	5,465,000
Ga. ....	348,000	2,283,000
Ky. ....	130,445,000	5,334,000
La. ....	3,808,000	6,650,000
Mo. ....	1,490,000	830,000
Miss. ....	556,000	1,396,000
N. C. ....	769,000	3,140,000
N. H. ....	1,320,000	17,320,000
Okla. ....	302,000	6,360,000
S. C. ....	787,000	340,000
Tenn. ....	793,000	16,990,000
Tex. ....	10,174,000	40,763,000
Va. ....	5,558,000	930,000
W. Va. ....	4,250,000	245,000
Total .....	\$36,788,000	\$258,007,000

## CIVIL ENGINEERING GRADUATES

The Virginia Department of Highways offers you:

1. A starting salary of \$3,536.00.
2. Generous periodic raises every six months of satisfactory service.
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4. A future with a highway organization that has an enviable tradition for accomplishment.

80 vacancies now in the Graduate Training Program of the Virginia Department of Highways.

A 48-month program offers training in every phase of construction and maintenance, surveying, bridge and road design, materials testing, research and the administration of a highway organization—under the supervision and direction of top-flight highway engineers with national reputations for progressiveness in highway construction and maintenance.

Virginia's terrain and geography offer you the opportunity to learn every facet of engineering practice.

For complete information write today to: Charles Nelson, Personnel Engineer, Dept. F, Virginia Department of Highways, Richmond 19, Virginia.

## NEW SALES LEADS

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The DAILY CONSTRUCTION BULLETIN, published 5 days a week, carries advance, accurate news on construction projects and the location of new industrial enterprises involving an expenditure of \$35,000 and more in the 16 Southern states.

This prompt news service enables you to reach "Live Wire" prospects at the proper time in selling services, materials, supplies or equipment. It is an excellent source of information for increasing your volume of profitable sales.

ANNUAL SUBSCRIPTION \$20.00

## DAILY CONSTRUCTION BULLETIN

Published by

MANUFACTURERS RECORD PUBLISHING CO.

Baltimore 3, Maryland



## INDUSTRIAL

September, 1951		Contracts Awarded	Contracts to be Awarded	First Nine Months 1951
Ala.	\$ 347,000	\$ 60,375,000	\$ 134,475,000	
Ark.	1,274,000	110,049,000	107,574,000	
D. C.	7,209,000	1,775,000	113,005,000	
Fla.	563,000	16,416,000	19,114,000	
Ga.	500,000	1,100,000	410,073,000	
La.	7,383,000	3,560,000	171,224,000	
Md.	378,000	9,185,000	110,275,000	
Miss.	921,000	3,410,000	46,812,000	
Mo.	200,000	1,857,000	33,566,000	
N. C.	2,817,000	31,800,000	17,874,000	
Okl.	28,530,000	22,550,000	22,550,000	
S. C.	500,000	3,470,000	377,215,000	
Tenn.	147,000	2,040,000	37,427,000	
Tex.	5,504,000	47,140,000	448,346,000	
Va.	730,000	700,000	28,126,000	
W. Va.	35,553,000	35,553,000	33,545,000	
Total	\$28,878,000	\$358,970,000	\$2,111,261,000	

## PRIVATE BUILDING

(City, County, State, Federal; Schools)

September, 1951		Contracts Awarded	Contracts to be Awarded	First Nine Months 1951
Ala.	\$ 3,728,000	\$10,290,000	\$ 28,069,000	
Ark.	7,053,000	60,000	10,818,000	
D. C.	90,000	4,260,000	23,642,000	
Fla.	15,600	7,810,000	42,487,000	
Ga.	6,804,000	3,965,000	36,105,000	
Ky.	230,000	1,951,000	11,951,000	
La.	2,119,000	2,488,000	36,663,000	
Md.	6,241,000	6,650,000	92,647,000	
Miss.	301,000	1,817,000	14,387,000	
Mo.	998,000	3,338,000	13,081,000	
N. C.	4,917,000	2,540,000	77,512,000	
Okl.	237,000	40,000	7,395,000	
S. C.	995,000	530,000	24,461,000	
Tenn.	1,172,000	305,000	34,262,000	
Tex.	16,465,000	19,631,000	111,681,000	
Va.	7,945,000	6,335,000	99,147,000	
W. Va.	182,000	105,000	6,385,000	
Total	\$60,220,000	\$70,434,000	\$671,203,000	

## PRIVATE BUILDING

(Assembly, Commercial, Residential, Office)

September, 1951		Contracts Awarded	Contracts to be Awarded	First Nine Months 1951
Ala.	\$ 1,822,000	\$ 7,770,000	\$ 43,379,000	
Ark.	474,000	770,000	3,788,000	
D. C.	13,445,000	9,399,000	105,026,000	
Fla.	2,083,000	12,984,000	36,245,000	
Ga.	1,671,000	4,675,000	12,936,000	
La.	3,723,000	11,760,000	63,101,000	
Md.	7,370,000	750,000	90,500,000	
Miss.	294,000	2,585,000	12,541,000	
Mo.	238,000	4,750,000	55,828,000	
N. C.	179,000	18,551,000	38,171,000	
Okl.	192,000	13,610,000	500,000	
S. C.	1,922,000	9,404,000	40,985,000	
Tenn.	2,716,000	8,675,000	62,415,000	
Tex.	7,823,000	31,454,000	131,604,000	
Va.	315,000	3,990,000	62,944,000	
W. Va.	211,000	4,000,000	465,000	
Total	\$46,831,000	\$155,125,000	\$792,551,000	

## ROADS, STREETS, BRIDGES

September, 1951		Contracts Awarded	Contracts to be Awarded	First Nine Months 1951
Ala.	\$ 3,069,000	\$ 94,000	\$ 19,100,000	
Ark.	4,342,000	2,840,000	8,275,000	
D. C.	23,586,000	12,060,000	874,000	
Fla.	3,727,000	103,310,000	63,693,000	
Ga.	1,671,000	42,400,000	19,584,000	
Ky.	2,119,000	3,500,000	17,683,000	
La.	8,508,000	2,128,000	36,358,000	
Md.	5,884,000	4,870,000	29,451,000	
Miss.	30,000	420,000	22,145,000	
Mo.	162,000	2,195,000	22,421,000	
N. C.	4,233,000	960,000	43,923,000	
Okl.	4,884,000	1,220,000	19,931,000	
S. C.	2,139,000	1,169,000	12,606,000	
Tenn.	13,987,000	27,325,000	92,938,000	
Tex.	264,000	1,516,000	30,940,000	
W. Va.	7,000	200,000	6,599,000	
Total	\$79,840,000	\$308,293,000	\$471,335,000	

## Bellows Gets Contract For \$4,771,000 Kelly Project

W. S. Bellows Construction Co., of Houston, Texas, the lowest of fifteen bidders for construction of the headquarters building at the U. S. Air Force Security Service, Kelly Air Force Base, according to Lt. Col. Edmund Kirby-Smith, acting district engineer at Galveston. The contract was awarded at \$4,771,000.

(4) 1/2 Yard Ball-Bearing Fair Leads: Condition like new; Price \$100.00 Each —

- (1) Chicago Pneumatic Rock Drill, Model CP32
- (2) Cleveland Pneumatic Rock Drills, Model H111
- (2) Cleveland Pneumatic Rock Drills, Model H10
- (1) Cleveland Pneumatic Rock Drill, Model S55-1
- (2) Ingersoll-Rand Pneumatic Rock Drills, Model J45
- (3) Ingersoll-Rand Pneumatic Rock Drills, Model J85
- (1) Sullivan Pneumatic Rock Drill, Model L-57
- (6) Gardner-Denver Pneumatic Rock Drills, Model S55-1
- (1) Denver Rock Drill Co. Pneumatic Rock Drill, Model 33L
- (2) Ingersoll-Rand Pneumatic Rock Drills, Model 100BC4
- (5) Chicago Pneumatic Demolition Closed Handle, Model CP111

The above drills used: price \$1500.00 for lot: subject to your inspection and prior sale.

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For further details, write:

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Baltimore 3, Maryland

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Rex 34E double drum paver #CDD229 ..... \$27,500.00  
8000 ft. Heltzel 9"x9" steel road forms ..... per ft. 1.70  
1—Jaeger type "X" diagonal screed finisher #50X017 ..... 7,000.00  
10—Turnomatic cement boxes ..... 3,200.00  
44—Batch boards for trucks ..... 800.00

### OTHER PAVING EQUIPMENT

1—Cleveland form grader #141X45 ..... 1,700.00  
1—Koehring longitudinal finishing machine #LF799 ..... 3,000.00  
1—Blaw Knox spreading machine #SA3223 ..... 3,800.00  
1—Buckeye fine grader #338 ..... 3,500.00  
1—Gallon 3-5 ton roller (tandem) #T3G16540, engine #VP4-1459166 ..... 3,200.00

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### PAYNE-OLIVER CONCRETE CO., INC.

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4—13TD. 22 ton Euclids 1948  
2—54 B. B. E. Diesel Shovels  
2—TD 18 Infi. Angledozers  
1/4 yd. Osgood Diesel Shovel  
2—E. Blast Hole Drills 27 T.  
3—Terra Cobra 14 yd. Scoops  
RD 7 Cat. Tractor & 10 yd. wagon. \$4,000.00  
3500 Manitowoc shovel H F.  
372 Marlon Diesel Shovel—1 1/4 yd.  
2500 Lima Shovel. HF  
3—1201 Lima Shovels. H F  
906 Osgood H F \$23,000.00  
255A P&H Diesel Crane—rebuild  
U.S. Motors Gen. set for magnet. A-1  
K480 Diesel Crawler Crane and D.L.

McCARTNEY MACHINERY COMPANY  
Youngstown 12, Ohio

2—C-11 Tournapulls #B6T2406-C11-C;  
#B6T2407-C11-C (have moved approx. 250,000 cu. yds. dirt each) \$38,750.00  
4—Super C Tournapulls #C3T5682CIH;  
#C3T5516CIH; #C3T5501CIH; #C3T-5667CIH (have moved approximately 125,000 cu. yds. dirt each) \$42,000.00  
TD-18 International tractor with hydraulic blade #TDR143787CC. \$8,925.00  
Caterpillar grader Model No. 11. #6K823.  
3/4 yard Lorain truck crane on 10-wheel Mack #468045-10072 \$8,500.00  
D-6 Caterpillar tractor with hydraulic angle blade #9U1181 ..... \$7,875.00

ALL PRICES F.O.B. OUR YARD  
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Model 104 Northwest Dragline  
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All in good condition, priced to sell.  
A. J. Hanson Pineville, La.

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3 yd. Dumpcrete bodies  
Welch 20x18 roll crusher  
Eagle cylinder crusher  
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Day No. 3 hammermill  
Falcon 6x3 gravel pump  
Hanson truck crane

TRACTOR & EQUIPMENT CO.  
10008 Southwest Highway, Oak Lawn, Ill.

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Experienced man can earn \$10,000 and more with leading eastern distributor. Exclusive lines, protected territory, generous drawing account and commission. Send complete resume of your experience to Box No. 9783, c/o CONSTRUCTION, Baltimore 3, Md.

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gives you more digging power at the tooth point — without tipping strain.

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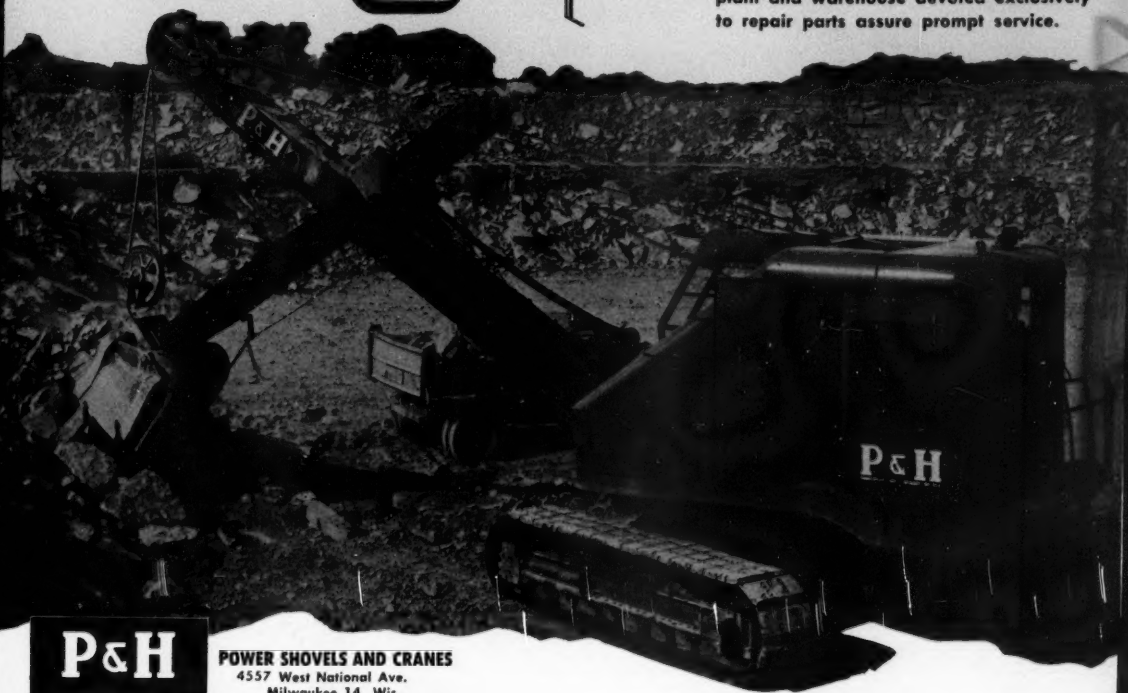
### *More Modern Design*

True tractor type crawlers reduce maintenance; live roller circle gives livelier swings; low pressure hydraulic control is faster, smoother; all-welded construction means greater strength.

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Adequate dealer parts stocks are supplemented by 20 strategically located branch offices and warehouses. One complete plant and warehouse devoted exclusively to repair parts assure prompt service.



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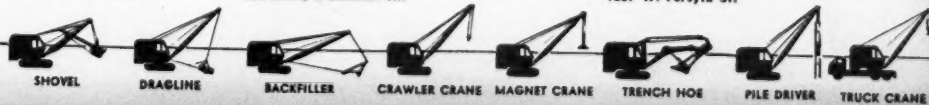
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No matter how you say it  
*It Comes Out the Same*  
 Last Year—This Year—Next Year

in 1940  
 we said



A motor grader without power on the front wheels is like a horse with roller skates on his front feet.

in 1945  
 we said

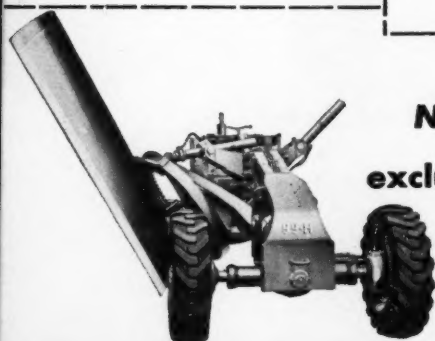


It's not in the cards for a grader with rear drive to equal the performance of one with All-Wheel Drive.

in 1950  
 we said



Don't handicap your horsepower! No grader with a dead front end can possibly deliver maximum power-at-the-blade.



**No two ways about it! Austin-Western's exclusive All-Wheel Drive goes more places . . . does more things . . . moves more material, farther and faster.**

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